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ovelette of Science Gone Mad
ARTHUR J. BURKS

LIQUID LIFE
A Fantastic Novelette
By RALPH
MILNE FARLEY

•

RHYTHM OF
THE SPHERES
A Story of
Robot Rule
By A. MERRITT

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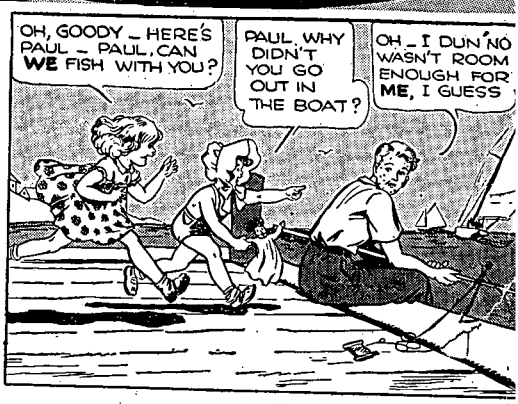
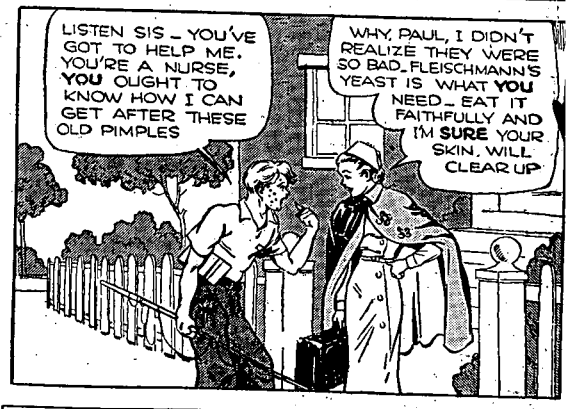


BUT PAUL — DORA SAID SHE WAS GOING TO ASK YOU, I HEARD HER
YES — AND THEN SHE SAID YOU HAD HICKIES — WHAT ARE HICKIES PAUL?
WELL I'LL BE JIGGERED —
SO THAT'S WHY I'VE BEEN SITTING AROUND WITH ONLY MYSELF FOR COMPANY!


LISTEN SIS — YOU'VE GOT TO HELP ME. YOU'RE A NURSE, YOU OUGHT TO KNOW HOW I CAN GET AFTER THESE OLD PIMPLES
WHY, PAUL, I DIDN'T REALIZE THEY WERE SO BAD. FLEISCHMANN'S YEAST IS WHAT YOU NEED — EAT IT FAITHFULLY AND I'M SURE YOUR SKIN WILL CLEAR UP

LATER
ATTA BOY — PAUL SURE IS ALL THE RAGE AROUND HERE THESE DAYS
WELL — HE'S CERTAINLY A DIFFERENT LOOKING BOY SINCE HE GOT RID OF THOSE UGLY HICKIES

—clears the skin

by clearing skin irritants out of the blood

Don't let Adolescent Pimples put a stop to YOUR good times

YOUNG PEOPLE are often plagued by unsightly pimples after the start of adolescence—from about 13 to 25, or longer.

Important glands develop at this time, and final growth takes place causing disturbances in the body. The skin gets oversensitive. Waste poisons in the blood irritate this sensitive skin —and pimples break out!

Fleischmann's fresh Yeast clears these skin irritants out of the blood. Then, the pimples go. Eat 3 cakes *daily* —one about ½ hour before meals —plain, or dissolved in a little water—until your skin clears. Start today!

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Why Trained Accountants Command High Salaries

—and how ambitious men are qualifying by the La Salle Problem Method

GET this straight.

By "accountancy" we do not mean "bookkeeping." For accountancy begins where bookkeeping leaves off.

The skilled accountant takes the figures handed him by the bookkeeper, and *analyzes* and *interprets* them.

He knows how much the costs in the various departments should amount to, how they may be lowered.

He knows what profits should be expected from a given enterprise, how they may be increased.

He knows, in a given business, what per cent of one's working capital can safely be tied up in merchandise on hand, what per cent is safe and adequate for sales promotion. And these, by the way, are but two of *scores* of percentage-figures wherewith he points the way to successful operation.

He knows the intricacies of government taxation.

He knows how to *survey* the transactions of a business over a given period; how to show in cold, hard figures the progress it has made and where it is going. He knows how to *use* these findings as a basis for constructive policies.

In short, the trained accountant is the *controlling engineer* of business—the one man business cannot do without.

Small wonder that he commands a salary five to ten times as great as that of the bookkeeper. Indeed, as an independent operator (head of his own accounting firm) he often earns as much as the president of the big and influential bank in his community, or the operating manager of a great railroad.

Some Examples

Small wonder that accountancy offers the trained man such fine opportunities—opportunities well illustrated by the success of thousands of LaSalle accountancy students.* For example—one man was a plumber, 32 years old, with only an eleventh grade education. Today he is auditor for a large bank and his income is 325 per cent larger.

Another was a drug clerk at $30 a week. Now he heads his own very successful accounting firm with an income many times as large.

A woman bookkeeper—buried in details of a small job—is now auditor of a great hotel, and her salary mounted in proportion to her work.

A credit manager—earning $200 a month—moved up quickly to $3000, to $5000, and then to a highly profitable accounting business of his own which nets him better than $10,000 a year.

And What It Means to You

Why let the other fellow walk away with the better job, when right in your own home you can equip yourself for a splendid future in this profitable profession?

Are you really *determined* to get ahead? If so, you can start at once to acquire—by the LaSalle Problem Method—a thorough understanding of Higher Accountancy, master its fundamental principles, become expert in the practical application of those principles—this without losing an hour from work or a dollar of pay.

Preliminary knowledge of bookkeeping is unnecessary. You will be given whatever training, instruction or review on the subject of bookkeeping you may personally need—and without any extra expense to you.

If you are dissatisfied with your present equipment—if you recognize the opportunities that lie ahead of you through home-study training — you will do well to send at once for full particulars. The coupon will bring them to you without any obligation, also details of LaSalle's convenient payment plan.

Check, sign and mail the coupon NOW.

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Opportunities in Accountancy—Check below and we will send you a copy of "Accountancy, the Profession that Pays," also copy of "Ten Years' Promotion in One," all without obligation.

☐ **Higher Accountancy:**

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- ☐ Traffic Management
- ☐ Law: Degree of LL. B.
- ☐ Commercial Law
- ☐ Industrial Management
- ☐ Business Correspondence
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- ☐ Expert Bookkeeping
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- ☐ Effective Speaking
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Present Position .....

Address .....

*Names available on request.

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THRILLING
WONDER
STORIES

The Magazine of Prophetic Fiction

VOL. 8 No. 2
OCTOBER, 1936

IN THE NEXT ISSUE

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A Gripping Novelette of Interplanetary Menace
By
JOHN W. CAMPBELL, Jr.

THE LANSON SCREEN
A Novelette of Mad Catastrophe
By
ARTHUR LEO ZAGAT

MUTINY ON EUROPA
A Novelette of the Prison Asteroid
By
EDMOND HAMILTON

THE BRINK OF INFINITY
A Breath-Taking Story of Doom's Equation
By
STANLEY G. WEINBAUM

—and many other unusual Novelettes and Stories

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ON THE COVER

An earthman pits his strategy against an invader from outer galaxies. This scene depicts the climax of Hal K. Wells' novelette, MAN-JEWELS FOR XOTHAR.

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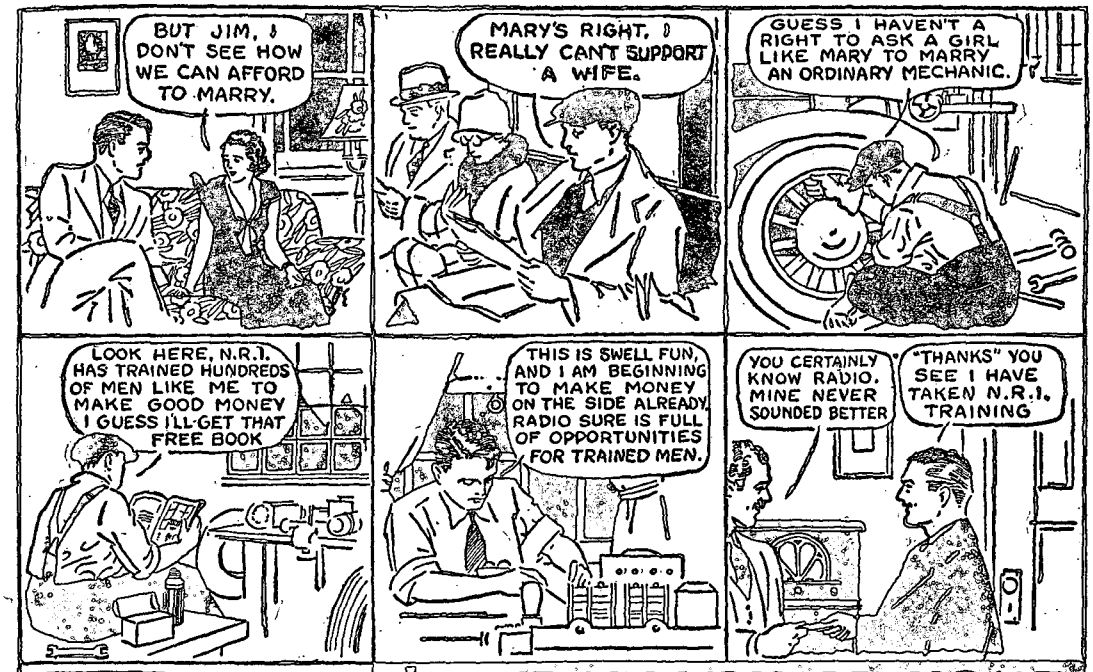
BUT JIM, I DON'T SEE HOW WE CAN AFFORD TO MARRY.
MARY'S RIGHT. I REALLY CAN'T SUPPORT A WIFE.
GUESS I HAVEN'T A RIGHT TO ASK A GIRL LIKE MARY TO MARRY AN ORDINARY MECHANIC.
LOOK HERE, N.R.I. HAS TRAINED HUNDREDS OF MEN LIKE ME TO MAKE GOOD MONEY I GUESS I'LL GET THAT FREE BOOK
THIS IS SWELL FUN, AND I AM BEGINNING TO MAKE MONEY ON THE SIDE ALREADY. RADIO SURE IS FULL OF OPPORTUNITIES FOR TRAINED MEN.
YOU CERTAINLY KNOW RADIO. MINE NEVER SOUNDED BETTER
"THANKS" YOU SEE I HAVE TAKEN N.R.I. TRAINING
OH! JIM, IT'S WONDERFUL. NOW YOU'RE ON THE WAY TO SUCCESS
YES MARY, AND THERE'S A REAL FUTURE FOR US IN THIS RADIO FIELD.

I'LL TRAIN YOU AT HOME *In Your Spare Time For A* GOOD RADIO JOB

J. E. SMITH, President
National Radio Institute

The man who has directed the home study training of more men for the Radio Industry than any other man in America.

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Many Make $5, $10, $15 a Week Extra *in Spare Time While Learning*

Practically every neighborhood needs a good spare time serviceman. The day you enroll I start sending you Extra Money Job Sheets. They show you how to do Radio repair jobs that you can cash in on quickly. Throughout your training I send plans and ideas that have made good spare time money for hundreds of fellows. I send special equipment which gives you practical experience—shows you how to conduct experiments and build circuits which illustrate important Radio principles.

Find Out What Radio Offers You

Mail the coupon now for "Rich Rewards in Radio." It's free to any fellow over 16 years old. It describes Radio's spare time and full time opportunities, also those coming in Television; tells about my Training in Radio and Television; shows you actual letters from men I have trained, telling what they are doing and earning; tells about my Money Back Agreement. MAIL COUPON in an envelope, or paste on a post card—NOW!

J. E. SMITH, President, Dept. 6J09
National Radio Institute, Washington, D. C.

HERE'S PROOF THAT MY TRAINING PAYS

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Earned $50 First Month (In Spare Time)

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J. E. SMITH, President, Dept. 6J09
National Radio Institute, Washington, D. C.

Dear Mr. Smith: Without obligating me, send "Rich Rewards in Radio," which points out the spare time and full time opportunities in Radio and explains your 50-50 method of training men at home in spare time to become Radio Experts. (Please Write Plainly.)

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CITY.....STATE.....

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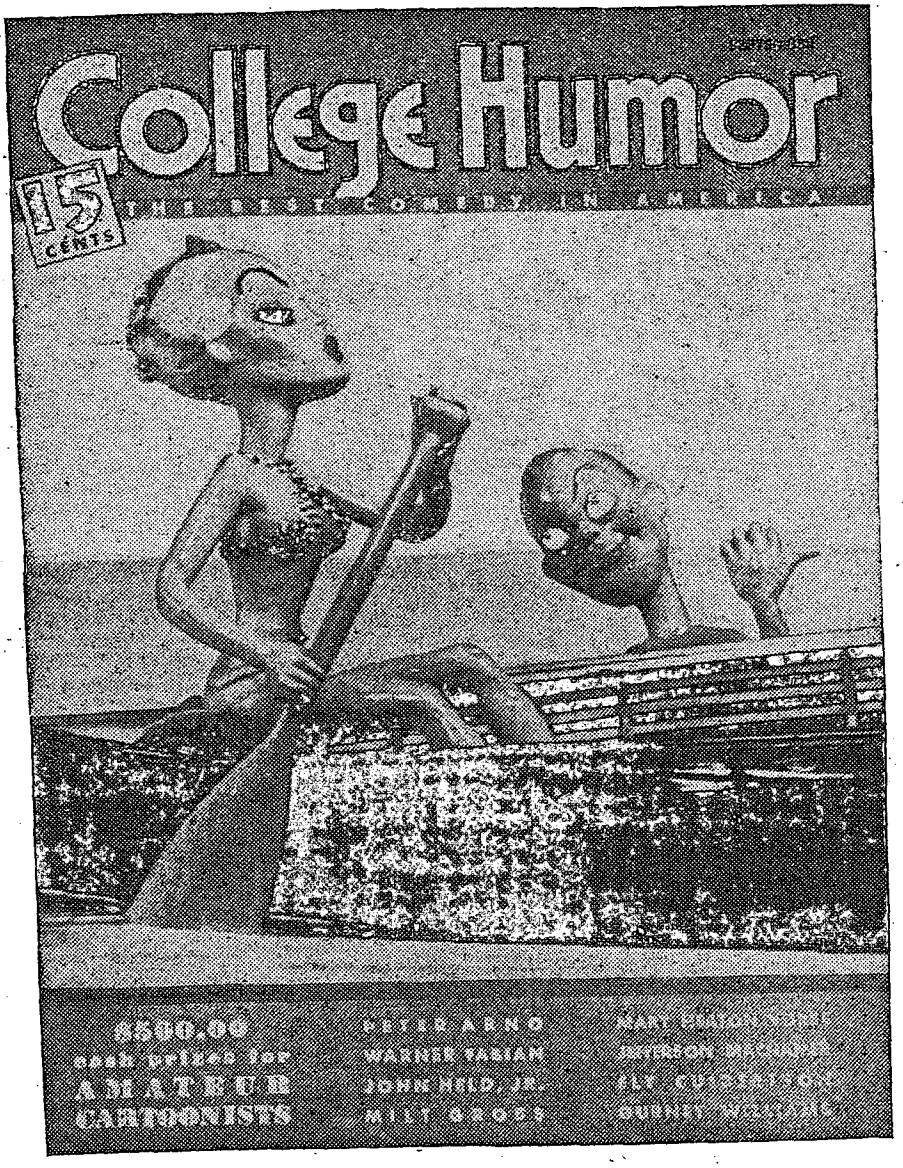

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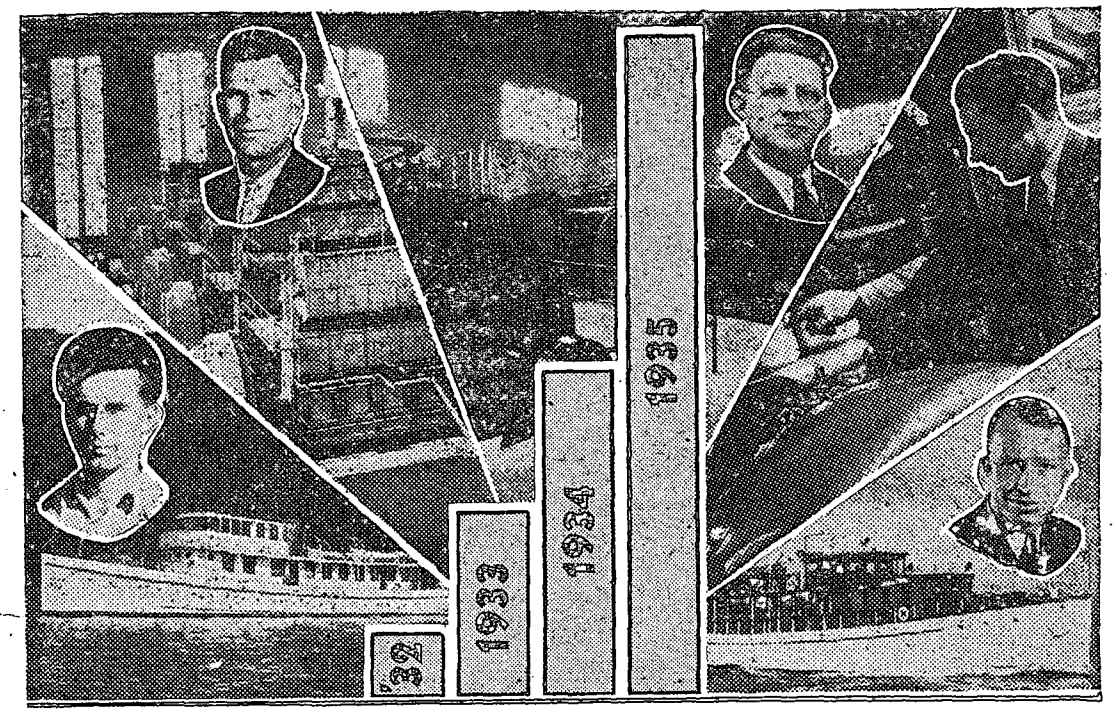

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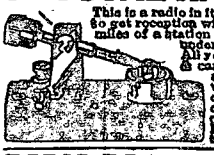

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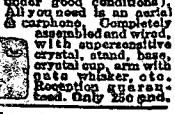

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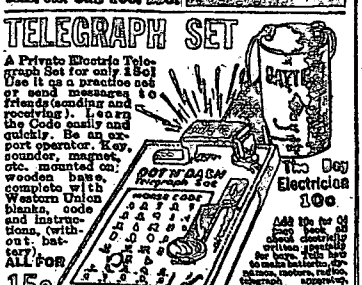

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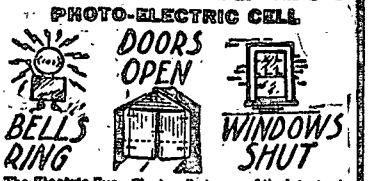

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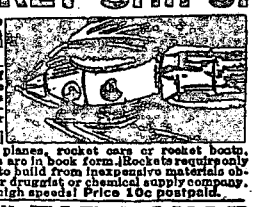

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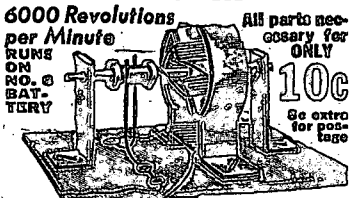

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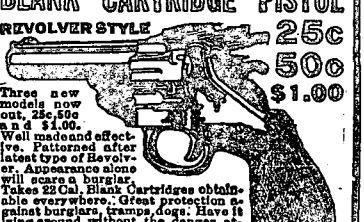

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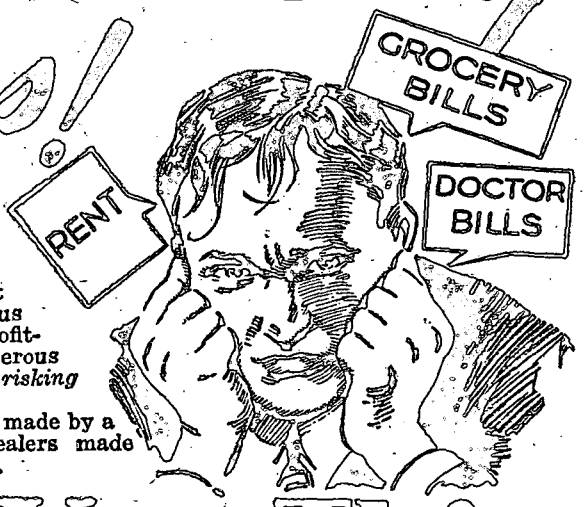

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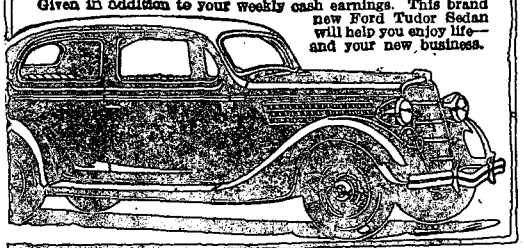

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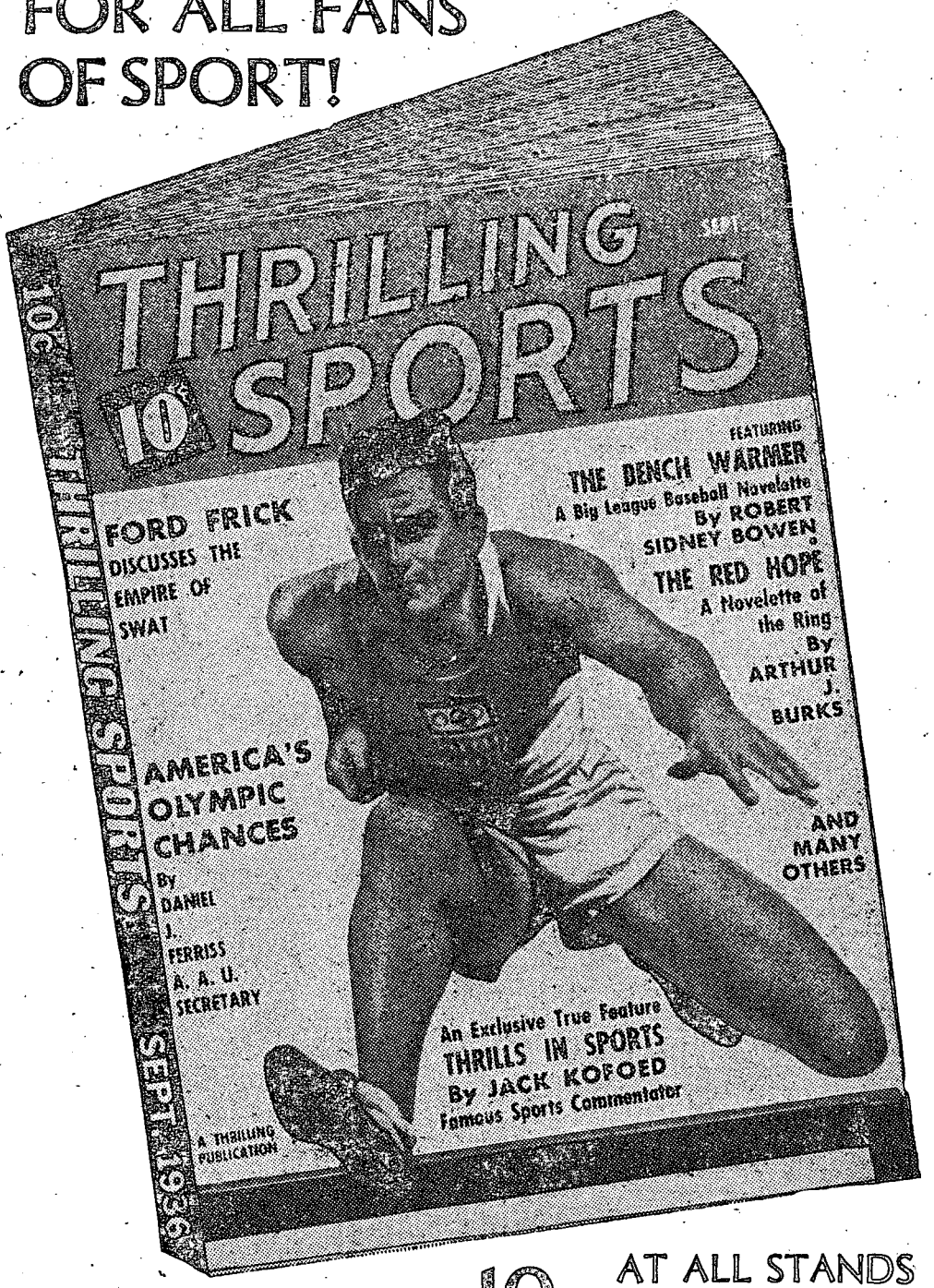

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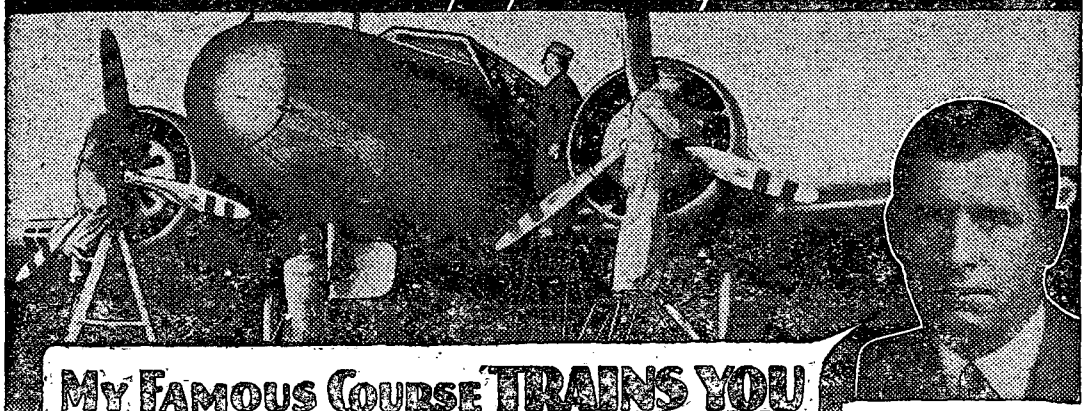

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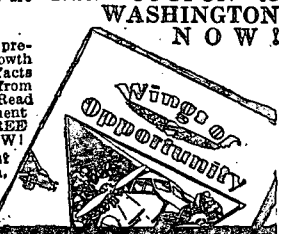

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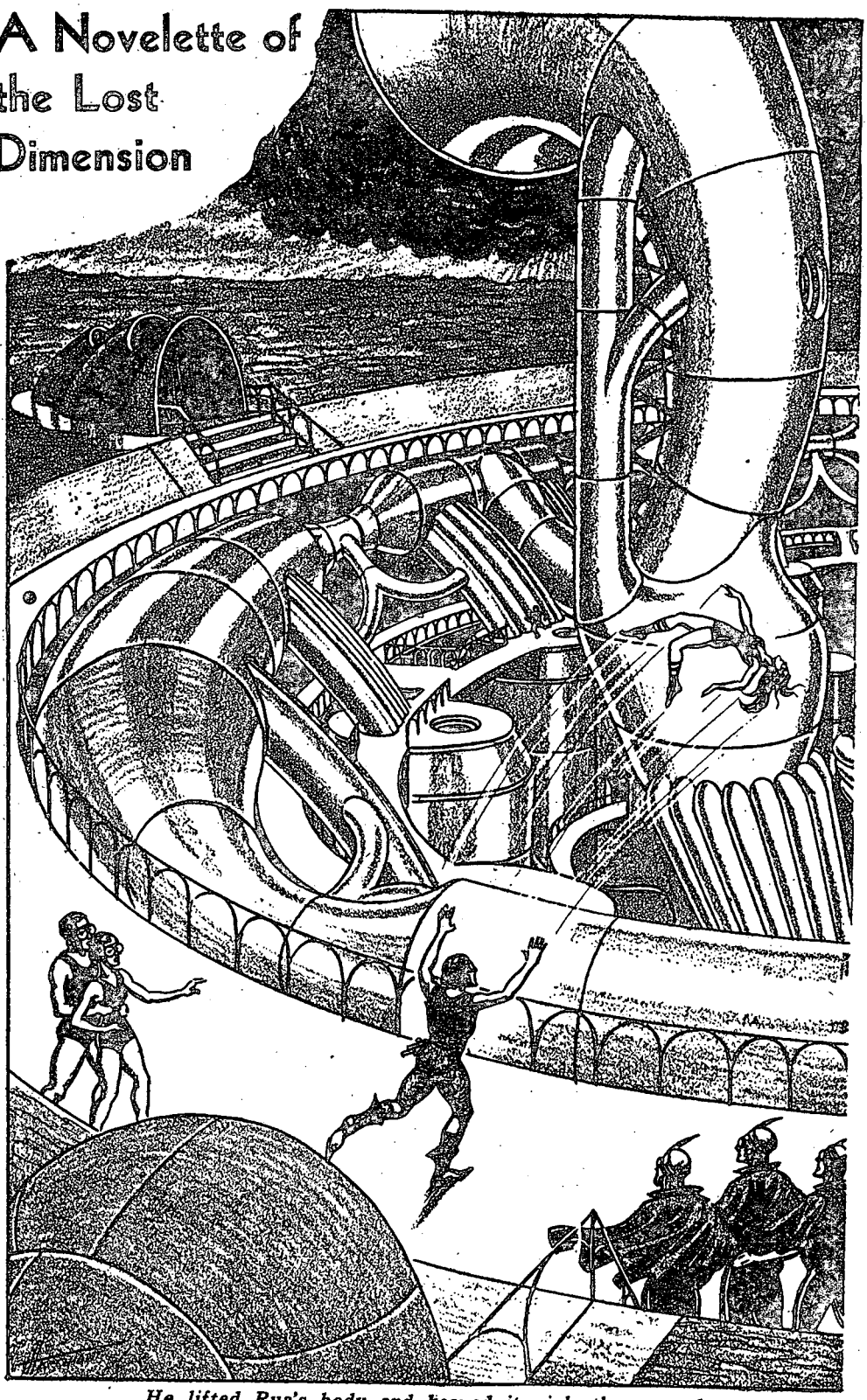

He lifted Rua's body and heaved it violently upward

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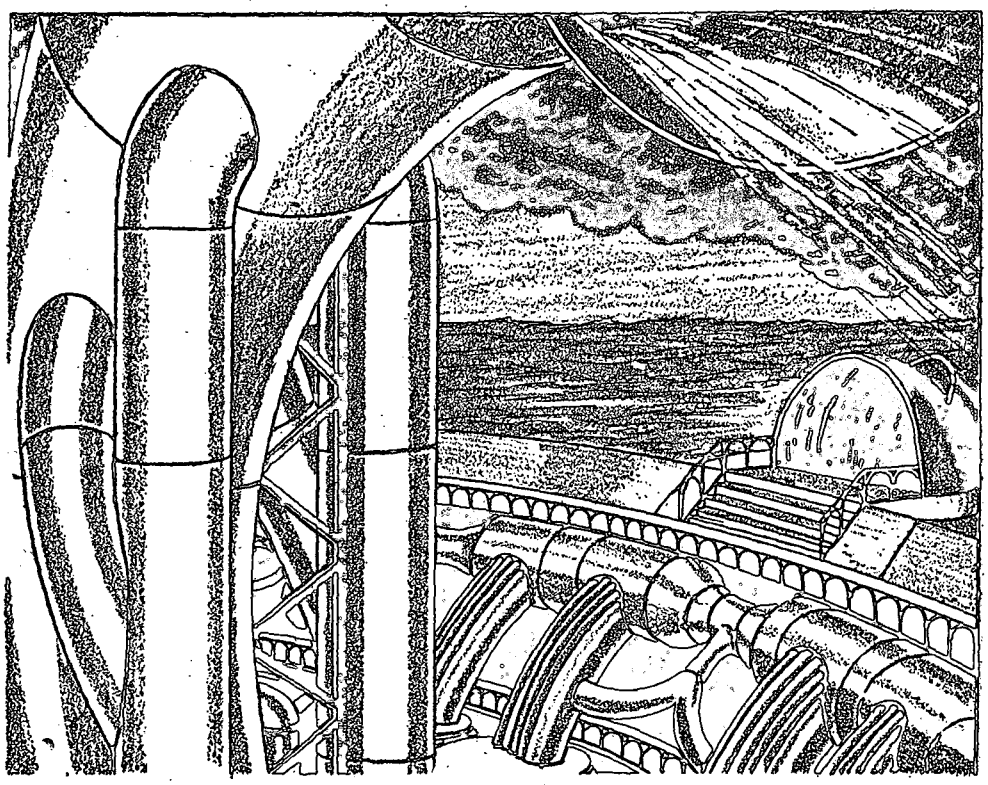

SHADOW GOLD

Johnny Hall Boards the Transition Express for Bhana, the City Beyond Space, Where Treasure Is Cheap as Dirt and Enemies Lust for Power!

By RAY CUMMINGS

Author of "Blood of the Moon," "Into the Fourth Dimension," etc.

CHAPTER I

The Unknown

JOHNNY HALL sat alone, and with trembling fingers opened the letter. Nearly a hundred pages were here in this communication from his dead father which had been lying in the Trust Company for fifteen years. He scanned the top page.

Weird, incredible message! So many things of mystery in his own boyhood memories of his father now were being explained. That night, for instance, when as a little boy he had joined his father in the mysterious workshop. Three milky, fluorescent beams of light converging on a little screen. Then the screen had turned into a dim yellow vista of darkness; and then things were to be seen. As though from a height, he had gazed far down upon a placid landscape,

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alive with shimmering yellow water.

A glimpse into another realm. But his father never would explain it. And then, a week later, that horrible scene of his father's death.

Johnny, six years old then, had awakened in the night; had sneaked into the laboratory room to find his father. Sight most horrible! His father was lying on a couch. He was wearing some kind of headgear; a sort of bathing suit; and there were wires running down his arms and legs. Not dead; his eyes were open, and one of his hands was fumbling at his chest. His whole figure was dissolving. A ghost shimmering there. It seemed drifting slowly down through the bed. And then it was gone!

Weird, never-explained mystery. But this letter was explaining it now:

> When you read this, Johnny, I will have been gone into a new Time-realm, for what of your life will be fifteen years—a different state of matter, because it has a different Time-dimension. The same Space as that which our own world occupies, but held separate by that mysterious stream we call Time. The two realms—ours and this Unknown—are swept close together now. It is my opportunity. Another such proximity will come shortly after your twenty-first birthday. If I am not back with you before then I may have perished. Or I may be alive—but unable to return.
>
> I want you to come and join me, Johnny. The trust fund will give you four thousand dollars. In a vault at the bank you will find, and now must claim, a small metal casket. No one but us two know what is in it. Take it to a place as near the couch in the laboratory of our old home as you can manage. The casket contains two transition mechanisms. At midnight of the tenth day after your birthday, from this designated place, I want you to come after me. I will have kept track of your Earth Time-flow if I possibly can—and if I am still alive I will meet you. Come to me, son. A great adventure. . . .

THERE followed ten busy days for Johnny. The old frame house of his boyhood was still standing; empty of furniture now, shabby and decrepit. He got a temporary rental of the premises. By night he brought in the metal, coffinlike box. He put it in his father's laboratory room, with a board table and chairs. He worked almost entirely at night studying his father's technical instructions.

Then came the last night. Ten o'clock. Johnny was ready; he sat waiting for midnight. There was only one person here on Earth, whom Johnny was leaving with any pang of regret. Anne Johnson. He had just come back from saying good-by to Anne. Swearing her to secrecy, he had told her what he was about to do. His six-foot bulk had towered over her as she stood suddenly shrinking against him. Then she was crying—and he had torn away and run from her home.

A knock sounded at the front door of the house! It startled Johnny so that he sat transfixed, frozen. It came again; insistent. Johnny padded into the dark front hall. He called gruffly through the barred door:

"Who is it? What you want?"

"Johnny! Johnny, dear—"

Anne's voice! He flung open the door. She scurried in like a dark little shadow, and he banged the door closed and barred it again.

"I was so afraid I'd be too late—"

She was breathless, pallid, tense; beautiful little dark-haired girl—but she was disheveled, wildly excited now. She held a small bundle under her arm, enveloped by her blue cloak.

"I came—to go with you, Johnny."

"Anne, you're crazy—" But the thing set his heart pounding.

He said at last, "All right—you win. You go in there. Put on one of the suits. Call me when you're ready."

He stood waiting.

"All ready, Johnny."

She stood in a sleek black bathing suit; her clothes lay in a little heap at her feet. Admiration for her swept him. Slim, sleek little Diana. She shivered a little as he buckled the heavy wire mesh belt around her slim waist. The adjustable headgear slipped over her coiled black hair and strapped under the chin. Wires connected it with a flexible necklace; wires were strung down her arms to bracelets; and others down her legs, fastened at the knees and ankles.

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His own equipment was similar. And then they sat down to wait until midnight. Johnny found himself queerly breathless. Soon he and Anne would be gone from this room. Vanished. Yet, scientifically, mathematically, they would still be here. The same dimensions of length, breadth and thickness. But a different factor of Time. No two material bodies may occupy the same Space at the same Time—

He thought, "We're explorers of the shadows—" It was like dying. He shook off the thought. This was a scientific thing; a change of bodily density—a different quality of Matter, altered by the mysterious electronic current of the mechanism. A change of Time-flow. Not a change of time, like yesterday compared with today or tomorrow. An alteration of the *flow of Time*—so that his human existence would move forward to its destination of death at a different rate.

A factor so fundamental, so vital, that its alteration altered every quality of Matter itself, to create another realm of existence. A scientific thing—frightening to do only because he had never done it before.

Midnight. Johnny shook himself into alertness. Anne's face was pale and grim; her dark eyes stared at him.

"Over there on the floor—lie down there," he said. He gestured. "That's where father's couch stood. He started from there. I'll blow the light out now."

He lay down beside her. It seemed that with the puffing out of the light they had cut themselves off from the world. She was clinging to his hand. He said, "I'll tell you when to throw the switch on your belt. To the first intensity only—we've got to start slowly—avoid any great shock. Understand?"

"Yes." He could hear her quickened breathing.

"Move your switch—just a little—"

She did it. He heard the hum of the circulating current, her gasp, and in the darkness he saw the silvery glow of her mechanism. Instantly he moved his own switch.

A tingling thrill shot through him. His senses reeled.

IN a moment Johnny's senses steadied. The network of wires on him tingled his flesh. They were vibrating with an oscillation, tiny, infinitely rapid. It seemed, all in that instant, that the vibration communicated to his body. It brought a thrill. A sense of excitement. But it was more than that. His whole being seemed tingling. It was a physical vibration, so that every tiny cell within him seemed quivering.

They were drifting downward. It was a sensation utterly strange. Weightless bodies hovering in a soundless void. The world above was gone now. The outlines of the room had flickered, tenuous as a wisp of smoke above them—and vanished.

He murmured, "We'd better try the higher intensities of the current. Ready now! We must keep together. Second! Third! Fourth!"

It swept them into an intensification of all the weird sensations. The humming within them increased.

An interval of Time passed. Time? A blurred, queer interval—Time of a new quality—a new rate of flow, coming into their being now. Johnny saw clouds whirling toward them—imponderable clouds through which they passed and could feel nothing. It was a grey scene, not empty now but filled with shadowed shapes, blurred and indefinite. A monochrome of grey. Then presently a little color was coming to it. A distant yellow glow.

He remembered his father's detailed directions. The first color would be yellow. A golden tinge. "We've got to slow down," he said. "Third . . . Second . . . First! Stop there!"

They were no longer in a void of emptiness. Distant shapes were taking form. The faint golden light was a blur overhead, but beneath them now were shapes of apparent solidity.

Off to one side, something solid—huge as a great golden mountain—reared itself up. And things were moving here in the air. Was that a slowly swaying human shape, off

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there not far away? He heard Anne suck in her breath as she saw it. The thing was a blob, with swaying arms and legs. It was human. A man. The daylight gleamed golden upon him.

The surface was steadily rising. It was only fifty feet under them now as they wafted gently down. Off in the distance there was a broad spread of water, rippled by a breeze. A mile or so away was a golden-glowing city, set back from the lake shore.

From the ground came a dim, red beam. The signal! His father's letter had arranged it.

Johnny cried, "He's alive, Anne! We're arrived! Normality!"

They turned their switches. Normal now to this new environment. They had arrived in the new realm. It was day. Not sunlight. The sky everywhere was flooded with a bright but diffused golden light. The red signal beam was extinguished. The figures by the fern-clump scattered as Johnny and Anne drifted down. Solid ground touched Johnny's feet. He scrambled, clutched at Anne, and they stood erect, swaying.

Strange, weightless bodies! It struck Johnny with a sudden mental shock. Gravity was hardly apparent here. He stood balancing, swaying as though the gentle breeze would waft him away. His body weighed hardly more than a few pounds.

"Johnny! Thank God you're safe!"

His father's voice. Familiar timbre, out of the memories of his childhood. And he saw a man's figure come with rhythmic swaying arms and legs in a glide through the air toward him.

CHAPTER II

Strange New World

NIGHT had come. Through the big oval open windows of the Government Castle where they were having their first meal in this strange new world, Johnny could see the golden daylight fading into a golden twilight; and then into night.

A dozen people of this world sat with Johnny and Anne and Hall senior. Some of them spoke English, which Hall had taught them. And Johnny listened to his father's account of this adjacent realm, to Earth, and the strange menace impending here. This was not the convex surface of a globe, but the concave inner surface of a void. A small realm. A void no more than a hundred or so Earth miles in diameter, with a thin layer of atmosphere hardly a mile in depth clinging to the concave surface. The light was inherent to the air—like a phosphorescence, yet waxing and waning to give an alternating day-and night somewhat longer than the corresponding Earth interval.

Only one race of people were here—and this, the city of Bhana, was their largest settlement. A scientific realm, perhaps the equal of Earth, yet so different that there could be no basis of comparison.

Tenuous, giant structures loomed upward, so that the city seemed as high as it was wide and long. Giant flowers and trees growing in gardens on the rooftops. Weird lack of gravity! The whole city was a tangled metal maze of trellises, balconies, rooms, windows, doorways.

Johnny stared around the dinner table now. Strange food; strange people. He saw his father no older. But he was thinner, almost ill-looking. His thin figure now was encased in a glistening mailed garment that could have been woven blue metal.

New world to Johnny. But the same jealousy, greed and the lust for gain characterized it. Johnny sat tense, eagerly listening.

Some twenty years ago—before Hall arrived—it was decided here in Bhana not to jail but to banish all important men criminals. A city in the distant forest was established for them. Hall was saying:

"There is a colony out there now. Several hundred. No one from here had ever tried to visit it—until recently. And now we find that it's fortified! Some unknown leader, with a ghastly, diabolical plot—we have not enough gold-gas available to combat it—"

Taro said, "Your father must tell

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you the science of our world—"

This Taro was a young scientist. Hardly young, perhaps, for though his face was unlined, his bearing and poise of manner gave him the aspect of a man nearly forty. His position undoubtedly was important; Johnny could not miss the note of command about him. Like these other men, his skin was bronzed. A hawklike face, with high-bridged nose, a wide, firm mouth, and a queerly pointed chin. His eyes were dark under heavy black brows. Weapons hung at his belt.

When Hall first came he had worked with the scientists, adding his Earth knowledge to theirs. He found this air heavily charged with a new atomic type of oxygen, hydrogen, carbon dioxide; and also "heavy" with a strange, gaseous form of several of the familiar earth minerals. Gold, in particular. A free electron type of gold was inherent to this air. Unmeasurable pounds of Earth's normal heavy-atom solidly congealed mineral gold were here expanded millions of times in volume and diffused through this atmosphere, forming its gold-content, and giving to it the golden light.

SHADOW Gold! "Yellow gaslight," Johnny's father called it. And in this air it was as vital to human life as oxygen is in the air of Earth. It held, indeed, a very similar position, for without the gold-gas this air was vitiated; the yellow glow was gone; and all living organisms, breathing such air, would die.

For the first few years after Hall's arrival this had been, as always, a very peaceful realm. He had voluntarily stayed; studying it. He saw very clearly that only harm could come from any close connection between it and Earth. So he had said that his transition mechanism was broken. He was marooned here—but there would be a time when his son would come.

Someone of this realm must have stolen the mechanism—for it vanished after a year or two. The plot of this unknown villain must have had its inception then; and possession of the transition mechanism made his plan possible of fruition.

Of them all at this dinner it was a youth named Nido who most had engaged Johnny's attention. A slim, graceful figure—a young man certainly of not over twenty. His single clinging garment covered him from shoulders to knees. His skin was smooth and bronzed, curiously sleek. His face was slim, yet firm of chin—a face foreign to anything Johnny had ever seen on Earth.

Nido said, "A thousand of our people have been killed."

"Yes," Hall agreed. "These banished criminals for ten years now must have had spies here in Bhana. This diabolic apparatus which they have built is hidden in the heart of the forest. Nido saw it. He flew there by night a week ago. He got in—but he could do nothing—and he barely escaped with his life."

Year by year other criminals must have clustered in the forest stronghold, lured by the scheme. And now this plot was at its culmination. In the criminal Forest City colony there were established now giant absorbers, condensers, for the isolation of gold. They were withdrawing the gold-content from the air, doubtless for transportation to Earth. Disaster to this little realm here. There were natural air currents here, unalterable save for occasional infrequent storms. Hall likened them to trade winds—a steady drift circulating over the concave curvature of this inner globular surface. And the prevailing drift was from the Forest City stronghold, toward Bhana and its neighbor settlements. The condensers would vitiate the air—steal the gold from it. And the empty, poisonous air would drift on down to these populous cities, bringing lethargy and death.

It had already come. Three times now in the past two weeks. Dark, goldless air. It had not lasted long—as though the criminals still were perfecting their apparatus. But it was enough to strike death here. The aged, the sick and the very young were all who had died thus far.

Johnny demanded, "Is there no cure

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for this terrible, deathly sickness?"

"Oh, yes," Taro said gravely. "There is a cure—but we cannot apply it."

"It is like being slowly asphyxiated on Earth," Hall said. "You die, breathing air that is impure. The cure here? On Earth we would say air with more oxygen. Here it is air with more gold-gas. We can expand mineral gold into gas. There is no metal, here or on Earth, which cannot be rendered gaseous. But we are faced with a gold-mineral shortage.

"Our power is the expansion of the electro-atoms of gold mineral back into gold-gas. You've already seen our rocket engines. We take small quantities of the gold from the air—and put it back with the exhaust of our engines. The reverse of Earth. Every engine on Earth exudes poison. But here—our rocket streams are the very essence of life."

Nido said, "It is the vapor from our gold fuel which can cure the sickness—nothing else, of course."

"Why haven't you sent an army to round up these criminals?" Johnny asked.

"In three weeks?" Hall retorted. "Again, gold is at the crux of it. Our weapons, too, use gold-gas. And now we have no real weapons—"

"We can make an army ready," Jeoh, the governor, said.

Hall said, "We sent a ship through the air to the Forest City—and it was assailed by a gold-bomb. The first explosive weapon ever used in this world. With unlimited gold now, these criminals have devised a bomb—an ultra-rapid expansion of the mineral into the gas."

THE meal was finished, but the discussion went on. The Forest City criminals were still experimenting—or waiting for something. Or, at least, not running the giant apparatus continuously. But at any moment they might start. And Hall believed, by what was vaguely known of their equipment, these giant absorbers running at full power might in a few days—or even hours—vitiate all the air of this little void.

The vague beginnings of a plan were coming to Johnny. Plans he wouldn't dare mention to his father—or to any of these grave officials. But tomorrow he would tell them to this young fellow, Nido; who had already been to the Forest City. If he and Johnny could get there secretly—make away with some of that gold mineral which the criminals had already extracted from the air—and bring it back here—

Johnny's thoughts were stricken from his mind by a newcomer to the room. A woman entered. She came with a glide graceful and sinuous as a panther.

She joined the group. What her position was no one told Johnny, but he saw that Jeoh was obviously fascinated by her.

And well he might be, Johnny thought. A woman who seemed to be beyond thirty. A figure sleek of hips, full-breasted—an indefinably foreign face framed by platinum-white flowing hair with black strands intermingled. It was a heavy face, full-lipped, sensuous, reckless.

The woman did not join in the discussion; she just sat with confident poise, listening. And she stared often at Johnny, regarding him with dark eyes.

In a small bedroom on the second level of his father's house, adjacent to the Government Castle, Johnny lay in a metal bed, with a soft fabric covering on it.

He lay drowsing. Suddenly he awakened. He started up on one elbow and the bed creaked with his movement. The sharp sound brought him to full alertness. . . .

The sense that someone was here in the room with him came strongly. Obvious! It was a waft of perfume. And then he saw, down by the floor under the window portière, something white. An ankle!

Johnny still had on his suit, and his clasp knife was at his belt. He lay, propped up on one elbow, and the fingers of his other hand silently drew out the knife and opened it.

He said softly, "Come out of that. I see you."

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The portière moved aside. The woman, Rua, stood smilingly before him.

"What do you want?" Johnny demanded, and through an interval he returned her gaze. Her hair, with its black strands, was coiled and piled now on her head—a headdress like a great cone.

"I wanted to talk with you." Her voice was a full, rich contralto. Then she said with sudden directness: "About what your father told you about the Forest City—I heard your questions. I could guess you act for yourself when you have plans. And you are daring. Do I guess right?"

His heart leaped. Had he been so transparent, back there during the supper? He said, "Act for myself? Perhaps." And a caution swept him. He added, "Speak out. Don't talk riddles."

She seemed to reach a sudden decision. "What I tell—you will keep in your own heart?"

Johnny shifted in his chair. "You mean, not repeat what you say?"

"Yes. Do not talk so loud. I—find you very interesting." She seemed breathless. "I go tonight on a journey. To him who is leader in the Forest City—they call him the Master." At Johnny's start, she said: "I go to the Forest City. I used to have—influence over this Master. I think to use that influence now. He has not seen me—a long time. And I think to make him stop the sending these clouds of sickness."

Johnny asked: "You can get there?"

"I can get there," she said. "I have a flying boat. It is here now—not far from here. Not even hidden—it is at your father's dock."

JOHNNY was leaning forward toward her. "You're offering to take me?"

Outside the window there was a sound. And Rua heard it. With a swift, silent swing she was at the casement, and Johnny drew himself beside her. But the garden outside seemed empty.

"How long will this journey take?" Johnny demanded.

"Not long."

"I'm ready," he said.

They left by the window, wafting themselves with a leap down through the leafy foliage to the ground. Rua glided cautiously, keeping within the heavy shadows of the shrubbery. The lake shore was near by. At Hall's long dock an open boat was lying moored. Its stern was decked over for a few feet into a tiny cabin, with the little engine amidships, and a control set in the bow.

They sat in the bow, with Rua at the controls. The boat started smoothly, almost silently. Exhilarating, weightless flight. An hour passed and it seemed to Johnny presently that the wind was increasing.

Another cloud of death coming from the Forest City.

Before Johnny could voice his startled question there came a sharp sound. Back along the dark canoe interior an upright figure showed, just emerging from the shadows of the little cabin at the stern. A third passenger; a stowaway!

It was Anne!

"Well, we're going back," Johnny declared grimly.

"Suits me," Anne said. She sat on one of the cross seats, still in her tunic, with a dark garment of gossamer fabric, which evidently she had taken from her bedroom in Hall's home, thrown over her.

So that was the noise they had heard at the window of Johnny's room! Anne had heard them talking of this trip—heard Rua say her boat was at the dock. And she had preceded them through the garden and hidden herself there.

Rua sat silent, regarding the girl with a smoldering flush.

How to handle this situation puzzled Johnny. He sat silent, trying to plan; but soon whatever plans he could guess at making were swept from his mind. The gale was blowing directly from the Forest City, back toward Bhana. And the normal yellow night glow in the air was steadily darkening. The giant condensers were operating at full capacity. That was obvious now.

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The darkness of the air steadily intensified as Rua's vehicle darted like a soaring bird forward into it. They were flying now some five hundred feet above the top of a gigantic forest—a dark, tangled, matted jungle. Another interval. Had Johnny dozed? Or was this damnable vitiated air making him lose consciousness? Rua said, "I can fix that." She opened a little valve in one of the glowing conduits which ran along the inside of the gunwale—conduits which carried the gold-gas from the engine to the several rocket-stream exhausts. Some of the engine exhaust streamed out. It was like inhaling whiffs of pure air in a room which had been stifling.

Ahead of them now the river widened and divided into two narrow channels with an island between them. The island was about a mile long and six or eight hundred feet at its widest.

AND here on the island was the Forest City of criminals. There were a few metal landing stages down among the trees. But no sign of human habitation. Then, from a closer viewpoint, Johnny saw mound-shaped earthen buildings, like little forts, at intervals along the island shore—a cliff shore, with the river some fifty feet lower.

"The Master and his men live underground," Rua was saying. But Johnny hardly heard her. His attention was focused to the center of the island, where there was a hundred-foot circular pit. It was a glare of yellow fluorescence. Two great conduits rose from it, one forking toward Bhana, the other in the opposite direction. They were two hundred feet high at least, widening into great round funnels, held by skeleton framework and guy ropes.

The pit sheltered the mechanism of the huge condensers. The funnel away from Bhana was the intake of pure air; the other was pouring out its black, polluted stream. The hum and throb of the giant mechanism was audible.

They were almost over the island now. He saw Rua fumbling with her instrument panel. From the bow, a light flashed. On and off. Puffs of intense red glare. It was her signal to the men below—the identification that this was not an enemy ship.

But Rua had been too distracted in piloting her craft; she had delayed the signal too long. From one of the forts came a puff of yellow light. A golden cylinder mounted upward. A gold-bomb. It burst before it reached its mark.

There was a dazzling yellow glare. The explosion was some forty feet away, but the air-pressure struck like a solid wall. One of the wings of the vehicle was torn away. They were falling and turning end over end—falling more rapidly than normal to this realm, drawn down doubtless by some sucking air current.

Then there was a rending crash. Johnny's senses slid into an abyss of black empty silence, with only the consciousness remaining that he was holding Anne in his arms.

CHAPTER III

"I Can Conquer the Earth!"

JOHNNY did not quite lose consciousness. He was aware of returning sounds, and that fragments of the wrecked craft were lying on him. He called, "Anne! Anne, where are you?"

Agonizing until he heard her voice. "Here, Johnny."

Then he heard Rua's voice. None of them killed. The light gravity had saved them. They scrambled up.

The top surface of the island showed now in the yellow nightlight—a rocky area, with trees, small landing platforms, and little metal kiosks leading down underground.

Rua murmured, "Don't move—they might fire on us!"

They stood motionless, docile, while men came up and surrounded them. None seemed to speak English, and imperiously Rua talked in her own language. Then the men took them through the kiosk entrance, down a dimly-lighted metal incline and along

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a length of tunnel. And then into a draped and padded grotto apartment.

Then the Master appeared before them. He came through a rift high up on the side of the grotto. They saw his figure stoop at the low entrance; then he straightened and came walking slowly down a narrow steep slope of rock.

It was Taro, the soldier-scientist, trusted as a friend by the officials in Bhana—he who had sat with Johnny and the others at the dinner only a few hours ago. Strange commanding figure, this Taro. His expression had a queer Satanic cast, the peak of hair in a triangle on his forehead, his slightly upturned eyebrows and narrow, pointed chin.

"So? You come to visit me, young Johnny?" His mailed garment was of black and white metal. One of his hands toyed at his belt where weapons were hanging. He was ironically polite. "Sit down. We will talk."

"Thanks," said Johnny. He gestured to Anne and she sat beside him on a padded bench. Taro remained standing before them, swaying slightly forward and backward. His gaze swung to Anne, and for a moment clung. Then he turned to Rua, who was standing here. "You did well, Rua, to bring him. And this girl, Anne—"

"I bring not her," said Rua. "She came of herself."

Taro's gesture dismissed her. He swung his arm, from which a string of ornaments hung clinking. "Enough. Go, Rua. Soon I will send this girl Anne to your care." He watched her as she slowly left the apartment. A guard moved aside to pass her, and a heavy metal door swung open and closed.

And Johnny stared. Prisoners?

HE saw now that the woman Rua had tricked him. Where was her vaunted power over Taro? Johnny had at least half believed what she said. In reality, it was obvious now, she was no more than one of Taro's spies, ordered to bring Johnny here.

"Now we will talk," Taro was saying. He was still smiling faintly. He swung all his body as though it were pivoted at the waist and knees, and addressed Anne.

"What is your name?"

She found her voice. "My name is Anne Johnson."

Her tone was low and steady. Strange little Anne, with courage not to show her fear. Johnny saw admiration leap into Taro's eyes.

"And what are you to him? His friend?"

"Yes—his friend."

"You are the first Earth woman I have ever seen. I think I like you." He turned to Johnny. "I have to talk of—my plan to go to your Earth, very soon. Your father, he thinks to send an army against me." He laughed harshly, sardonically. "I work with your father when I am young. Rua knows him since a little girl—he make good his job to teach us your language. But he is an old man—a fool to help everyone and not himself. But you, perhaps—"

"You want help from me?" Johnny said quickly.

"I tell you. On Earth I will be very rich—perhaps richest of any man in your world. That brings great power—not so?"

"Yes," Johnny agreed. "Just about."

"I understand that." His grin came again. He lowered his voice a little. "We are over two hundred of us here. I have always tell my men I take them with me. I can conquer the Earth! That is true. But I do it alone."

His face was intense. "I—Taro—how could I ever be powerful here? Gold means nothing here. Your great Earth—who shall say, with all this gold, what Taro may do?"

He checked Johnny's interruption.

"You listen—you ask my plans—I tell to you. My condensers here, I will run them until all the gold in this little world is mine. Are you rich on Earth?"

"No," said Johnny.

"That is good. You will be, living with me. I need you. I am a fellow practical. I will get to Earth with much gold. What then? I look strange. I need clothes. I need a house. I

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need—" Again his gaze swept Anne. "I need a woman to keep my house. I need my raw gold changed into money to buy what I want."

Johnny nodded. Then he said abruptly, "Did you steal the transition mechanism my father brought here, fifteen years ago?"

"Yes," Taro smiled. "And I fool them all in Bhana that I have to make many journeys to other cities on government business."

He paused; then he said, "And here I have a surprise for you—" He called to one of his men. The fellow came with the black sack Johnny had left in the wreckage, laid it at Taro's feet and went back to his post.

Taro opened the sack and took from it the two mechanisms which had transported Johnny and Anne from Earth! Johnny understood now. And Anne gasped, and stared. Rua's midnight visit to Hall's home—to get Johnny—had also been to get these mechanisms.

"How did that accursed woman know where father hid them?" Johnny demanded.

It made Taro laugh. "She explain to me—your father, naturally he tell a thing like that to Jeoh, the governor."

And Johnny remembered Jeoh's fatuous look at Rua when she had come to the dinner.

TARO added, "We have now three of the mechanisms here. This realm is doomed. Everyone here will die—except myself—and you and this girl. You do not want to die? You will go gladly to Earth—out of death here."

"Yes," Johnny agreed. "Why wouldn't I?"

He added cautiously, "I would like on Earth to share your gold. I can certainly help you."

"Of course," Taro smiled. "And I will have this Earth girl."

With two backward sweeps of his arms, he wafted himself closer to Anne, who had moved a few feet away. Every muscle in Johnny was tense for a leap.

Taro added, with his slow smile, "You will find me a man you can like very quickly. I know how to please women. Are you afraid of me? Do not be."

She had lost her cloak; she was garbed only in her suit. His fingers brushed lightly over her neck and throat. She did not shrink, but suddenly a cry burst from her. And Johnny leaped, head first, like a diver taking a plunge. His head struck Taro's shoulder; the force of Johnny's leg-thrust against the rocks knocked both their bodies half a dozen feet from Anne.

Johnny floundered, clutching at his adversary. He felt his fingers reach Taro's belt; but Taro's hand caught his wrist, twisted it with surprising strength. They struck the rock floor.

But this was Taro's natural environment. He jerked loose. His hand was at his belt. A weapon came out. Anne screamed again. A guard from outside was sailing across the apartment in an arc.

In Taro's hand was a small cylinder. A coiled wire sprang from it, struck Johnny's chest, and, uncoiling, wrapped itself around him, pinning his arms. And in another second Taro fired again. Another wire struck his knees. Lashed them. And Taro, pouncing, lifted and flung him. Helpless, all in those few seconds, bound by the tightening wire into an inert bundle, Johnny's body sailed backward across the grotto.

And then the guard, with a black stone knife in his hand, came like a giant bird and pounced, but did not strike, for Taro shouted a command.

The grotto was in an uproar. Other guards hurtled through the air and landed on Johnny. Then they lifted him; held him balanced erect on his feet.

And Taro was standing now, grinning. He called: "I would not hurt you—this time. We will talk again when you have less foolish anger."

The men carried the bound Johnny away into a dim, cavelike cell. They unbound him. The metal door closed; clanked with outer bars. The voices faded.

Johnny was left alone, with only

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the steady distant hum of Taro's giant condensers breaking the silence.

Johnny could find no way of getting out of here. He shoved at the door, but it was unyielding. A tiny glow of reflected light came from the vaulted ceiling, and he could presently see that he was in a small eroded cave whose walls, ceiling and floor were patched with metal. A small ventilator grid, breast high, admitted a stream of pure air.

In a corner of the cell there was a small metal bed, with a fabric mattress. Johnny lay down. He was bruised and tired. And both hungry and thirsty. He supposed someone would come, eventually.

He drifted off into restless slumber, and was awakened by a voice. He started up, confused. There were faint murmured words, in English.

"Johnny! Johnny Hall! You in there?"

It was coming through the small ventilator grid which was only a few inches wide; it seemed some four or five feet away.

"Johnny—I'm waiting—trying to get you out." There were other sounds. Other, more distant voices. The murmuring voice said hurriedly, "I come again—" It stopped.

THE heavy barred door moved inward. Rua came through, with a metal platter of food and drink.

"Thanks," Johnny said. "Look here, have you been with Anne?"

"Yes. She is all right. She ask me about you. Taro, he was pleased that I bring you. He will take us all to Earth—"

"Good," said Johnny. "Tell him the sooner I get out of here, the better."

She leaned forward. "Once I love Taro very much. But you—I think I like better. You are angry that I trick you?"

He shoved her violently off. "Get out of here!"

She swayed to her feet. "No man has ever said that to me before."

Fury of a woman scorned. Upon her heavy face was a look of smoldering anger. "You love that pale Earth girl. Yes—you love her, love her!"

He grinned. "Go on—beat it. Get out!"

She moved through the doorway, and was gone. The men swung the door closed. Johnny went on eating. And then cold fear struck at him. What a fool he was—what an accursed fool! He had sent Rua away in a vengeful fury—and it was she who had charge of Anne. And whose voice was it which he had heard through the ventilator? A friend here—

Then at last Taro came. He stood in the doorway with the guards behind him. He smiled. "You feel more with reason now?"

"Oh yes," Johnny agreed. "Is Anne safe?"

He held his breath. "But yes," said Taro. "I have to go and inspect my condensers. You hear that they still operate? I was thinking to take you now to see them. We must plan how best we are to transport the gold to Earth. The time is almost here—"

It made Johnny's heart leap. A chance—

"I'd like that very much." He was standing, with Taro facing him; and he saw that Taro was alert to his least move.

Johnny grinned. "I'm not fool enough to jump on you again."

"You are a fellow I like," Taro responded. "We shall have no trouble. There are many details to arrange. Come now."

They went up an ascending passage. It seemed not more than fifty feet until they stood in the shelter of a metal kiosk on the island surface. A guard was here. The giant forked funnel towered overhead. The luminous pit under it hummed and throbbed.

Taro and Johnny were clinging to a low railing. It led from here across the rocks to the lip of the condenser-pit.

"Hold tight," Taro murmured. "You could blow away so easily."

They edged along the railing; and now three dark-robed men with goggles followed after them. Johnny felt now the impurity of this tum-

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bling air—eddies of the poisonous cloud of death overhead which were swept down here. Taro was telling his plans for transporting the gold to Earth. They would begin that soon, and meanwhile keep the absorbers steadily running.

"We'll need the transition mechanisms handy," Johnny said.

Taro chuckled. "I have them safe."

"Where?" said Johnny. He tensed for the answer; but Taro only laughed.

"Suit yourself." Johnny said. "Where is Anne? Let's take her now and show her the gold. Tell her our plans."

"She is coming," Taro said readily. "Rua brings her."

They started again along the railing. It joined a similar rail at the lip of the pit. And edged black against the glare, were the figures of two women. In a moment Johnny and Taro—and the three guards—joined them. Johnny was aware of Anne's quick anxious glance, and a smoldering gaze from Rua.

Taro said, "The wind is very strong. My condensers make a disturbance world-wide."

THE light from the pit was so intense that Johnny could not look into it. He edged over to Anne; he put his arm around her. The three guards had approached. Taro and Rua were donning goggles. One of the three guards handed a pair to Anne, and then one to Johnny—goggles with dark lenses to dim the glare. Then the black-robed, goggled man swayed away from him, gripping the railing. But his body brushed Johnny—and his hand, just for an instant, gripped Johnny's arm. A warning? A signal? Was this the mysterious friend? A friend here, masquerading as one of Taro's men? Johnny was alert.

With the goggles, Johnny could see comfortably into the glare. A metal incline led over the lip of the pit, and then a few feet down to a railed platform. It was in a back-eddy of the wind, partly sheltered. And from there they gazed down at the strange, forbidding scene spread below them.

The pit was circular; about a hundred feet in diameter. It was, in effect, a giant cone, set point downward into the ground. The two overhead forked funnels came down, narrowed into twenty-foot conduits which branched into a system of small tubes and pipes. They stretched like tangled pythons over the steeply sloping inner surface of the great cone whose central bottom point, Johnny judged, was a full hundred and fifty feet below him.

Metal handrails on the cone's inner surface were strung between the vats and conduits. But Johnny saw no men down there. He leaned toward Taro.

"Where do you control this?"

Taro answered the question readily. The control house was up on the island surface. Fifty men were there; and all the others were spread at various points along the channel bluff, manning the island's defense weapons.

"The gold—" Taro added; and he gestured down toward the bottom of the pit, where the conduits led to smaller vats and converged at last into one. And there, the gold was visible. Mineral gold. It came sliding like yellow sand, through a grid, down a little chute and into an open container. The narrow yellow stream gleamed and sparkled in the light.

Taro was saying, "I will show you the volume of our treasure. For the transportation to Earth—"

A goggled man came plucking at him. They talked excitedly in their own language. Then in English, Taro exclaimed:

"One of my men found killed! His clothes and weapons taken! There is a spy lurking here—"

He moved a few feet away, talking with several other excited men who had joined him. Johnny stood tense, with a hand on Anne's shoulder. The original three guards blocked the nearby exit from the balcony ledge, though they moved a little from it to listen to what Taro and the others were saying.

Suddenly a swish of air sounded. Rua's body came sailing head forward

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and struck both Anne and Johnny together. They had been standing clinging to each other. Rua's jealousy! It flared now to an uncontrolled frenzy. Her onslaught knocked Johnny away from Anne. He fell sideward; he saw Anne fighting the older woman's clutch, and a knife blade glint in the yellow light. He shouted wildly.

"Anne! Look out—her knife—"

In that second Johnny gripped a handrail, and with a pull of his arm, flung himself at Rua. He saw the black glinting blade over Anne's breast; he caught Rua's wrist; twisted it; the knife fell—and they sank in a struggling heap.

AND in that second, the commotion had spread. Taro came lunging upon Rua. Johnny glimpsed his face, distorted by a wild fury. He had a knife, and with a sweep plunged it into the whiteness of Rua's breast and left it there. Johnny jerked free of the mêlée; his hand had snatched Rua's knife from the floor. He gained his feet, holding Anne under his arm. But in that second half a dozen bodies struck him. He saw knives coming at Anne; he warded them off, and suddenly yielded.

He relinquished Anne as Taro drew her upright. Rua's body lay inert on the ledge. Limp, dead thing, stained now with crimson. Sensuous, heavy face, beautiful once, but now with staring eyes and fallen jaw.

On Taro's face was a cold contempt. "The end—for her." He steadied himself on his feet; he lifted Rua's body and heaved it violently upward past his head. It rose above the nearby vats, sailed upward and outward.

An eddy of wind caught it; then an outgoing circular rush. It was sucked up; dwindled by distance—a little oblong blob. The draperies waved; the head and long hair dangled. It was sucked up; dwindled by distance, whirling end over end. Then it lunged into the upper gale of rushing wind—a dot, and it was gone.

Taro was smiling. He turned his grim smile upon Johnny. "She was right when she think you and Anne are lovers. Not so? Well—she is out of my way, now."

And, for the same motive as Rua's, would he not dispose of Johnny? The thought was knocked from Johnny's mind. There came a distant shout from Taro's men overhead.

Sudden, startling news; so startling that it rang with a turmoil over all the fortified little island. From off in the direction of Bhana, the fluorescent comet-tails of oncoming flying ships were visible—a great luminous crescent across the golden sky!

CHAPTER IV

Combat in the Giant Cone

ANNE and Johnny were being shoved upward from the cone-interior. Taro left them clinging to the upper railing with a group of goggled men guarding them. And Taro himself darted away to take command of the island's defenses.

What a different scene was here now! The great forked funnel still belched its foul cloud into the dimly golden sky. A haze was off toward Bhana, blurring now the great fiery crescent which marked the line of distant oncoming vessels. They were flying high; still many miles away. To Johnny it seemed that there must be a hundred or more of them.

But Hall and Jeoh had tricked Taro with a surprise. Ahead of this main squadron a smaller fleet had secretly come and landed in the nearby forest. The ships were hidden, but the men from them had already sallied forth to the attack.

Across the channel there was a radiance of light a mile away. The nearer forest was dark; and from the darkness on the opposite river bank, human figures were rising, like human birds in this realm of so little gravitational force. A few came at first; then a flock of them. Men impelled individually by small rocket engines. They lunged up into the wind. They were flung away by crazy wind-eddies; but struggling, they mounted over the channel.

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Taro's little forts were in action now. From some, small golden projectiles mounted, and burst among the fluttering aerial figures. Puffs of intense golden glare illumined the night. The sizzling little thundercracks mingled with the roar of the wind and the humming throb from the cone-pit. The rising, struggling figures were blown and scattered by the raking bombs. But some survived, struggled higher, got above the channel, then over the island and were fluttering down.

From the dark forest, every instant, more were rising. And the crescent of Bhana ships swept nearer, sank to the forest to reinforce the others which were already there.

A desperate, frenzied attack. From one of Taro's forts, a jet of black goldless air was now hissing up into the struggling enemy figures. It swung back and forth. It seemed to cut a swath through them, so that hundreds of them, limp like dead birds, were hurled away by the wind. But there were too many now. They began landing upon the island; floundering down, mailed men with glinting swords, fluttering to the island surface. Scrambling; gaining their feet; struggling toward the forts where in a moment hand-to-hand fighting was in progress.

The goldless air jet came down, wavered and for a moment raked the island surface. Johnny caught a stifling whiff of its fumes, which the wind tore away. Then the jet went up into the air again. A bomb, badly directed, burst near at hand.

A hundred or more men of the Bhana forces seemed to be on the island now.

And still more every moment were dropping from the cloud of them overhead. The bombs from Taro's forts were wavering. The interiors of many of the little stone buildings now were engulfed by hand-to-hand combat. There was a low squat building a hundred feet away. Johnny thought it perhaps the control room of the giant absorbers. The Bhana men were massing in front of it, but horizontal air jets were tossing them back, frustrating their attempts.

Then Taro again was here. He came between Johnny and Anne. The golden glare painted his face and there was no mistaking its grimness. He said, "I had no thought they would attack with suicide desperation like this. I kill ten to every one who lands here—"

YET more were steadily coming. A little group of them fluttered down and caught a railing near at hand. A tiny gold-bomb flung horizontally, burst and scattered them. Its air pressure tore at Johnny; its light dazzled him. He turned confused, and his heart leaped wildly. He was alone here! Taro and Anne were gone!

Then a mailed, goggled figure was struggling with him. One of Taro's guards. He fought. He called, "Anne! Anne, where are you?"

"Johnny!" This man he was fighting, murmured, "Johnny! Wait! Don't—"

Not fighting him! Holding him—trying to ward off Johnny's blows. His antagonist's goggles came off. "Johnny—I could not get to you. Only just now—"

A familiar voice. The voice through the ventilator. The glare now showed Nido's face—Nido, the young man whom Johnny had so liked in Bhana.

"Your father was so worried over you, Johnny. You and Anne—and Rua's boat gone. Always, we have suspected Rua. So I came here—landed in the river. I got down here, killed a guard—"

Johnny gasped, "Anne is gone! Anne and Taro—"

"Yes. I saw them. Into the cone, just a minute ago." He pulled at Johnny. "This way; watch that the wind does not blow you."

They drew themselves from the island surface. It was only a few steps to the glowing cone-rim. They plunged down into it. There seemed no following figures. The invaders were all assailing Taro's forts and the control house.

Nido plunged ahead, with Johnny after him. They passed the metal

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ledge where before Johnny had gazed down into the cone. No one here. They scrambled down a metal stair incline. They were on the steep inner surface now, sliding, floundering, clinging to the metal handrails.

Johnny gripped his companion. "The transition mechanisms — he would keep them by the gold. Take her to Earth—"

Taro's getaway. Abandoning everything—escaping with Anne.

Nido was panting: "The gold—near the bottom. Let me lead you."

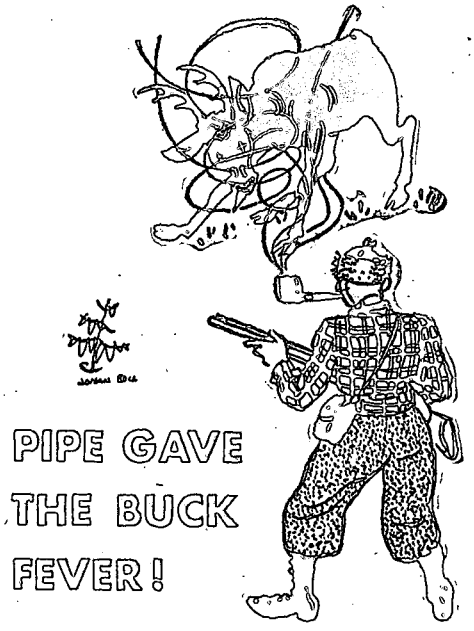
The confusion, the dazzling glare, the plucking wind, made it difficult for them to keep their feet. They were sliding, half falling down the narrow railed pathways between the vats. It was eerie here.

Then Johnny found that they were by the open vat of the gold-mineral. There was less wind here, and less glare. A great pile of yellow sand, and the trickle from the metal chute steadily adding to it. He felt Nido thrust a long metal bar into his hands; and saw Nido scramble and wrench another from the apparatus nearby.

Then they saw Taro! He was perched on a ledge partly behind a nearby vat. Taro and Anne. He had already forced her to don one of the transition mechanisms. He was starting to put one on himself. His clothes were bulging, bloated with the gold-sand which he had stuffed into pockets and pouches of a garment in which now he was robed. Anne was crouching, terrified. Then she saw Johnny and Nido come plunging.

She lunged, but Taro caught her; cuffed her face. He was reaching for the transition switch at her belt. Then suddenly he must have realized his own peril. Anne was desperately fighting him; and abruptly he seized a knife from his belt. Its blade flashed over Anne's breast.

All in a second or two. Nido was in advance of Johnny as they hurtled their bodies through the air. And Nido, more skillful, was plunging with truer aim. His body struck between Anne and Taro, and twisting, he caught the knife in his own breast



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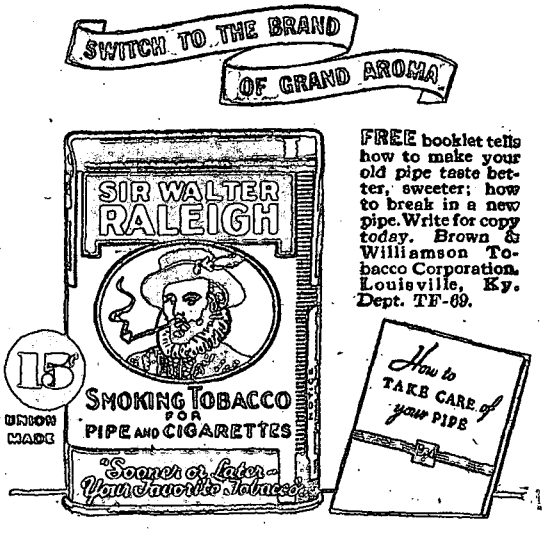

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and sank down, partly on top of Anne, still trying to shield her.

TARO was erect, swaying, fumbling for another weapon to meet Johnny's plunge. Johnny struck him. They rolled and bounced on the ledge, kicking, scrambling. Taro had another knife in his hand; it slashed Johnny's shoulder and then was gone—knocked away in the struggle though Johnny tried to catch it. Taro's fingers clutched at his throat, then shifted, gouging at his eyes, knocking away the goggles.

"No you don't!" Johnny panted. "Give me that!" Taro was now clutching from his belt a strangely-fashioned cylinder weapon. They struggled for possession of it. Johnny was the stronger. He found himself with the heavy, sharp-pointed cylinder in his hand. He had no idea how to use it, save to stab with its point.

Taro was wildly squirming, lunging his body, twisting his head. Johnny saw that his grin had faded, and a wild terror was in his eyes. The stabbing cylinder struck his forehead. There was a sizzling flash that seared Johnny's hand. Taro's forehead had cracked like the shell of an egg. The cylinder had exploded.

There was only a gruesome headless thing writhing in Johnny's arms. He cast it away. He lunged for Anne. "You wait, Anne—I'll be back in a moment."

A frenzy was on Johnny. He remembered that iron bar which Nido had thrust at him—and Nido's purpose then had been to smash all this damnable mechanism.

The bar was where Johnny had dropped it. He seized it; whirled and plunged for a great, coiling pipe which was white with snow and ice congealed upon it. The coil smashed under his blows. It seemed that all the world here was bursting into light. Then he was pounding a vat, with a vast hissing roar and glare engulfing him. The vat exploded with a great upflung sheet of yellow light; and Johnny staggered back, crouched and leaped again to his task.

But soon he saw his efforts were not needed. Deranged mechanism. The derangement now was spreading of its own momentum. The broken icy coil hissed with yellow vapor. Another vat went up into a sheet of flame. The pythonlike conduits were bursting. The heat momentarily was blistering, but the wind sucked it away.

Black smoke swirled, turgid, rushing upward in the wind, and Johnny still could breathe. There was an instant when he saw the headless body of Taro sucked upward into the maelstrom, ironically following Rua, a dark blob; then it vanished.

Through the chaos of electric glare Johnny fought his way back to Anne. She was bending over the body of Nido; she seemed oblivious to the inferno around her. She gasped:

"He's alive, Johnny, but he's—"

Nido's glazing eyes saw Johnny; his bloodless lips parted into a faint smile. His faint words were audible as Johnny and Anne bent low over him.

"You did it, Johnny. Saved my world—that's good. And I saved Anne for you. She is—she is very beautiful."

His gaze clung to Anne's face—the last thing he wanted to see as the eternal darkness closed in upon him.

Anne and Johnny crouched together, over the shell of what had been Nido, with the chaos of glare and roaring, blasting tumult of sound bursting around them. Then the glare slowly died. A puff of light here, then another far away, dimmed by the smoke.

The throb of the condensers was gone. The diabolical mechanism at last was stilled. Darkness and silence came, with only the wind sucking and whining across the top of the giant cone.

CHAPTER V

Johnny's Treasure

FOR an interval Johnny and Anne crouched dazed, huddled together in the smoke-filled gloom at the bot-

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tom of the cone-pit. Then they became aware that the air was clearing; the normal breeze across the cone-top brought a lessened pressure which continued to suck up the fumes. Lights and sounds were distinguishable up there now. A blurred turmoil.

And presently they climbed laboriously through the tangled smoking wreckage to the island surface. The golden night was brighter now; the giant branching funnels were still standing, but only a normal breeze was passing through them. The island-top, no longer gale-swept, was a turmoil of lights and men, with a last remnant of the fighting still in progress, so that Johnny and Anne crouched in hiding, fearful that the victorious Bhana forces might kill them before they could proclaim their identity.

Bhana ships had landed here on the island now, disgorging fighting men. Overhead, others were circling, zooming past with the glare of golden rocket-tails.

Then the fight was over. The strewn bodies everywhere here were mute evidence of its brief but savage fury. One last spurt of goldless air-jet leaped from the nearby control building where a last remnant of Taro's men still were fighting; and then the Bhana warriors, massed here on the rocks, swarmed forward and engulfed them.

The confusion was passing. Men came and peered into the wrecked cone. Then they climbed down into it to get Taro's gold—to bring it up and transport it to Bhana, where all the available engines, running full, would put it back as fast as they could into the polluted atmosphere.

Normality to this realm. Taro's menace was past. Then Johnny and Anne disclosed themselves. They were taken to Jeoh, and then to Johnny's father, who had come here with the Bhana forces.

The gold-sand was strangely light, almost weightless. There was only its bulk to handle. Johnny watched the men carrying and loading it. On Earth, it would be fabulous wealth.

"Yes," Hall said. "And we are going back to Earth now—without it. Contact with our Earth can bring nothing but harm here."

"You did magnificently, Johnny. Poor Nido—he deserved to live to see all this triumph." Hall sighed. "I just want to get back to Earth now, Johnny. Destroy my damnable transition mechanisms."

He seemed like a man utterly tired, at the end of a task which abruptly was finished.

They stood watching while the gold-sand was loaded into a Bhana ship. All the Bhana craft were still exuding golden streams, circling off over the forests and back. Johnny had secured the transition mechanisms from the cone-pit. Anne had been wearing one of them; Johnny and his father donned the others. The flight to Bhana was a few hours' trip down a steady wind. Triumphant, returning fleet. Johnny did not see the main sections of Bhana itself.

THE city, damaged by the storm, was dark, with all its lights cut off—its transportation system stilled by lack of gold fuel. The ships took some of the gold there now. The lights winked on. The city emerged from darkness and impending death. The thousands of stricken people were treated by small exhaust-jets, as on Earth, ozygen tents are used.

Hall, from his own home, had gathered just a few trinkets, mementoes of his years here in this world. He felt that he could not stand saying good-by to his friends here. Hastily, he, Johnny and Anne got into Hall's little car, to go to that spot outside the city where Johnny and Anne had landed. They would leave from there.

And in the car, they found Hall's little serving maid. Her name was Neena. Johnny had met her when he first came; he had hardly noticed her. Nido's sister. A feminine duplicate of the gentle Nido. The same bronzed glistening skin; the same patrician aspect of delicately moulded features. Johnny stared at her now and thought he had never seen so

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quaintly beautiful a girl anywhere.

She had been crying; the shock of losing her brother; and now, to lose Hall, her master. Hall said gently:

"It's best for us to go, Neena. Our Earth must never know of your little world. I came here, but I brought you nothing but tragedy and death."

She just sat staring. Hall piloted the car out over the golden lake. The light was growing with the coming dawn. Johnny told himself he had never seen so beautiful a sight as this glorious golden landscape.

Hall landed near the clump of giant ferns, a mile or so outside the golden-glowing city.

"You can fly the car back, Neena," he said. "You'll explain for me? Tell everyone I always knew they were my sincere friends."

Neena gulped and nodded. "You—won't ever come back?"

Hall suddenly said, "I won't ever let anyone else on Earth have the secret of the transition. But maybe—sometime—we might come."

Neena turned abruptly, and from the car produced a small sack which she had hidden there. And under her arm was a rolled bundle of fabric. With a quaint, pathetic smile, she gazed at Hall as she unrolled it.

"My brother Nido had planned with me to do this when you left. He—he is not here, but I am doing it for him. These clothes from your house—they are yours."

She handed Hall two metallic robes, fashioned with many pouches and pockets. Hall took them, surprised but smiling.

"Why yes, Neena, thank you." He was puzzled. He said, "I made them years ago, Johnny, anticipating your coming. I was collecting a little gold-fuel I had forgotten, and I used all of it since, in rocket engines."

But Neena was lifting the small white sack. "A present from our world; you were very good to us always. Nido gathered it from the little engines. It is not much. Our world will not miss it—or need it."

Little golden treasure. Johnny was standing with his arm around Anne. He glanced down and met her glowing misty eyes, shining with the happiness of her love. Treasure so much more precious than all the gold of all the realms in all the Universe.

"I thank you," Hall was saying gently. "We all thank you very much, Neena."

Then presently they were ready to start. Neena's quaint little figure, waving farewell in the growing golden dawn-light, was the last thing they saw as they swept away into the transition.

Next Issue: BRAIN-STEALERS OF MARS, a Gripping Complete Novelette of Interplanetary Menace by JOHN W. CAMPBELL, JR.
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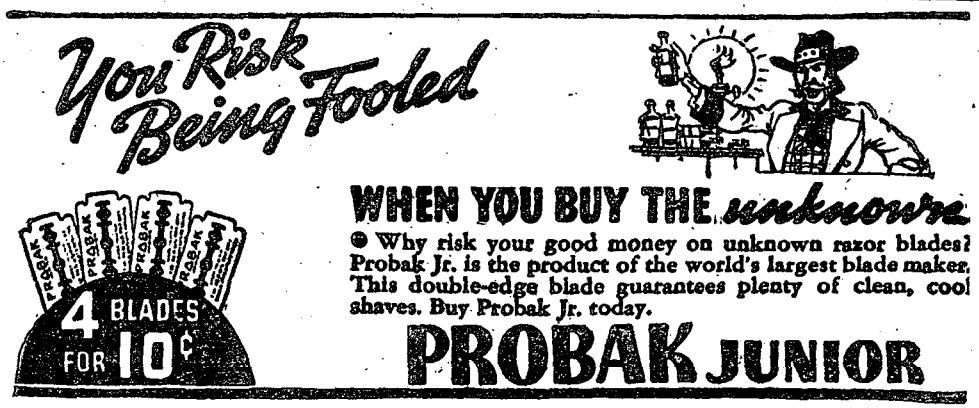
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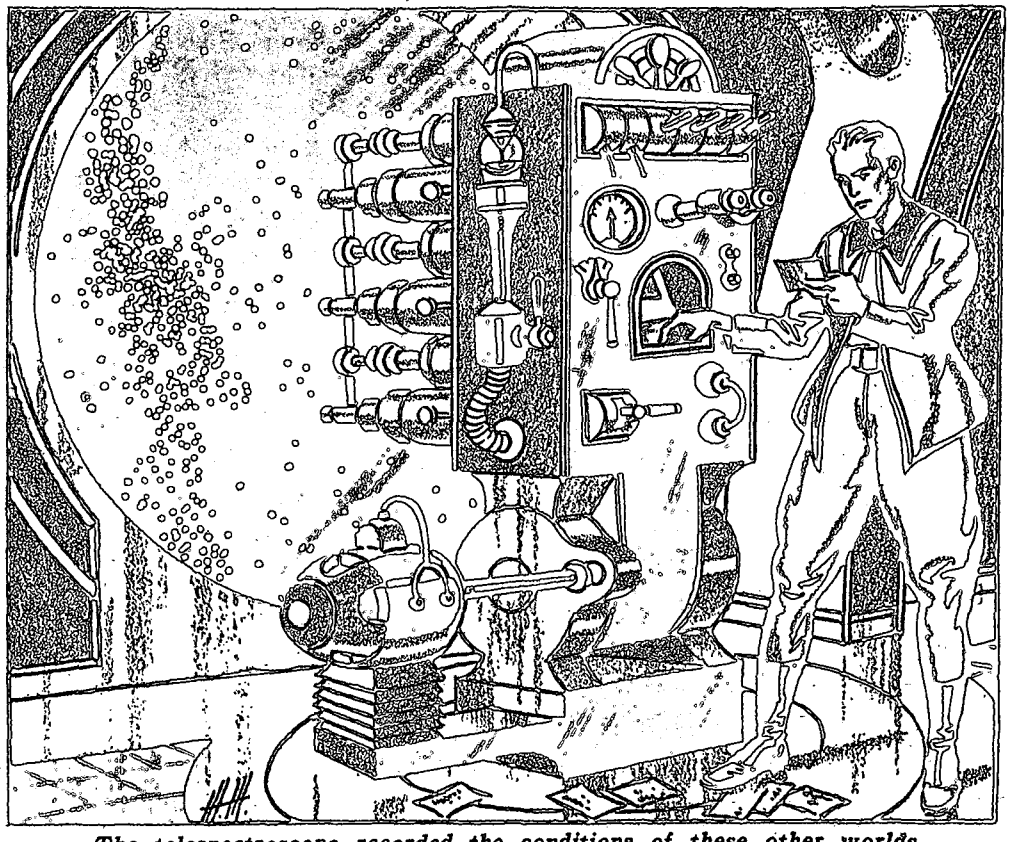
COSMIC QUEST



The telespectroscope recorded the conditions of these other worlds

To Save a Race from Destruction, a Star-Roving Explorer Speeds Through a Boundless Universe!

By EDMOND HAMILTON

Author of "The Comet Doom," "The Truth Gas," etc.

ON that night I left Earth, every soul on the planet was gathered to see me go. A packed, silent crowd of hundreds of thousands, massed beneath the flaring blue lights around my little ship. In the distant darkness rose the black and mighty towers of our city Khlun, the last city on Earth.

The air was bitter cold, for the great glaciers that now almost covered Earth had crept within a few hundred miles of our city. Yet the freezing crowd around me, the last representatives of humanity alive, did not seem to feel the cold as they watched me with desperate hope.

Lun Lor, the aged, white-haired Chief Councillor, had that same yearning hope in his old eyes as he stood in the blue glare bidding me farewell.

"Ran Argal, the last chance to save humanity from extinction is now in

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your hands," he told me in a voice broken with emotion. "If you can find, somewhere out in the cosmos, a world to which we can migrate, our race may yet survive. But if you cannot, the race of man soon dies. The vast glaciers that have crept from the poles over our planet, as they did long ago, will soon cover all our world. In a year this last city of man will be covered by the ice. It will be thousands of years before the glaciers recede again, and we can exist only a few years on an ice-covered world.

"We must migrate to another world if we are to live. The other worlds of this solar system are all uninhabitable now, but somewhere out in the vast cosmos may be a world with the right conditions for human life. It is a small chance, for only very few stars have planets, and human life requires a planet with exactly right conditions. Yet in this new ship of yours, which with its dimension-shifting power can travel at speeds hitherto undreamed, you can fly far out around the cosmos and perhaps locate a habitable world to which we can all migrate in similar ships."

MY throat choked with my own emotion as I told him, "I will do my best, sir. If there's a habitable world in the cosmos, I'll find it!"

"I know that you will, my son," he said. "During your absence we will start construction of ships similar to yours. And every soul on this planet will be praying for your return."

I turned to the door of my torpedo-like little craft, and there stood the slim white form of Neela, my beloved.

Her warm arms went wildly around my neck in a last embrace.

"Ran Argal, whatever else you do, return to me!" she cried. "Even if you cannot find another world on which we can live, return so that at least we can die together!"

I pressed her tightly to me. "Nothing in the cosmos can keep me from coming back to you, Neela. And when I do come back it will be with news of some world on which we can live and love, we and our children and children's children."

Then I stepped into the door of the little ship. Before I closed it, looking out across that sea of yearning, desperate faces, I raised my hand in farewell.

Once the door was tight shut, I entered the tiny control room at the prow of the little craft. Invisible force impulses shot back from keel and stern as I pressed a key, and my ship lifted sharply into the black night. Out through the atmosphere of Earth I roared at high speed, and then I was in the vast, star-gemmed void.

I climbed upward at tremendous speed. Below me receded the ball of Earth, entirely ice-covered except for the last equatorial strip where stood my city. At last I hung in space above and outside the solar system.

The time had come to start my real journey. A little hesitatingly, I closed the switches of my newly invented dimension shifting apparatus. It began to hum loudly, and everything in the craft glowed with pale light.

The mechanism was shifting every atom of matter in the ship into a different and parallel dimension. This made it possible for the ship to attain colossal velocities of many millions of light-speeds relative to our own ordinary three dimensions.

Anxiously I peered forth. Despite the fact that I was now dimensionally different, the sun and its planets and the thronging stars of our galaxy looked the same, for I had constructed the windows and instruments of the craft so that bodies beyond the solar system would be so.

I closed the control of the power impulses. The ship shot forward with a speed that no matter had ever attained before. At many millions of times the velocity of light, my craft cometed out through the universe.

It was not my intention to investigate our own galaxy for a possible world, since already our scientists with their marvelous instruments had combed it and found no habitable planet. No, it was the other distant galaxies of the cosmos, which their instruments could not reach, that I

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meant to search for a planetary refuge.

The solar system dropped behind me like a flash. I was racing headlong out through the swarming suns of our galaxy, and I was traveling at such an awful speed that I was in deadly danger of crashing into a sun or dark star.

A great cluster of suns loomed ahead of me with appalling rapidity, and I veered my craft sharply aside. I grazed past them and then saw before me, too late to swerve, the vast shining curtain of a gaseous nebula. But my ship tore through the mighty cloud of glowing gas without hurt, its matter being too diffused and its temperature too low to harm me.

I ripped past another star cluster, and then suddenly was outside the galaxy, tearing out into the vast emptiness of inter-galactic space. Far ahead of me glowed faint patches of misty light, other galaxies of suns floating in the void countless light years away.

NOW I opened up the ship to all it would do. As swift as thought, it seared through the void, heading toward the great spiral star cloud of the Andromeda galaxy. Moving in an alien dimension, I was travelling at speeds that made light seem motionless.

I was half appalled by my own daring in thus defying the immutable laws of matter. But my heart still throbbed with determination when I remembered my doomed race back in the freezing city of Khlun, when I remembered old Lun Lor's yearning eyes, and the wild and pleading face of Neela.

"I *will* find another world for man, if there is one in the cosmos!" I cried to myself.

In me, Ran Argal, the unconquerable spirit of man was making a last mad challenge to the grim laws of the universe. I would succeed. I must.

I kept my thoughts upon Neela and upon my pitiful people as the cruiser fled on at mind-shattering velocity toward the Andromeda galaxy. After a while, I dropped off into sound sleep.

When I awoke hours later, the spiral-shaped galaxy ahead was a colossal cloud of flaming suns across the firmament. I was near enough it now to set my automatic astronomical instruments to searching it for a habitable planet.

These instruments were the wonderful ones our astronomers had perfected. With super-telescopic eyes each one scanned a part of the star field before them. And each mechanical eye, when it found planetary systems in its field, automatically shifted upon them a higher powered telespectroscope which recorded on a permanent film the size, mean temperature and atmospheric conditions of those worlds.

Tensely I turned the great battery of telescopic eyes upon the galaxy ahead. Then I watched eagerly as the clicking, sliding, impersonal instruments searched that great mass of suns. As each mechanical eye finished its record, I snatched it up and examined it.

Disappointment after disappointment! In the first place there were in this galaxy, just as in our own, only a very few stars that had planets at all. Planets can only be born when two wandering suns approach each other so near that tidal action tears away part of their matter to float free and form worlds. And long ago astronomers had mathematically calculated that the chances of such encounters were extremely small, and that planetary systems must be extremely rare.

And the few suns here that did have planets, offered no hope for man. For just as the astronomers of long ago had guessed, the great majority of the planets I surveyed were made up, not of inert atoms like the matter of Earth, but of unstable atoms such as make up the suns themselves. Such worlds were welters of radioactive and atomic forces, totally impossible for life.

The recorders of my instruments had convinced me that nowhere in the Andromeda galaxy was the kind of world I sought. But I did not give

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up hope. Before me in the cosmos lay a vast number of other galaxies. Surely somewhere among them was a planet that had just the right conditions necessary for the existence of human life.

So I steered my racing ship on past the Andromeda galaxy and toward the next great spiral swarm of stars. So distant it was that it was two days by my chronometers, even at my vast speed, before I neared it enough to make observations.

AND it, too, was a disappointment. In it, it is true, were one or two of the super-rare planets of inert matter like Earth. But some were too far from their parent sun, and so were too cold for human life, and some were too near and too fiercely hot. The only one of approximately right temperature had neither atmosphere nor hydrosphere.

I began to see the enormous odds against finding a world of exactly the right conditions. Yet I had no thought of giving up. As I hurtled deeper and deeper into the galaxies, moving farther around the great curve of the spherical cosmos, in days that grew into weeks, I was nerved on by the thought of the people of Khlun waiting for my word, of Neela and her last anguished cry.

Mad odyssey of nightmare flight through the starry cosmos! So far was I now around the curve of the cosmos-sphere that long ago I had lost all sight of my home galaxy. Yet still my searching was vain. In none of the great island universes I passed did I detect such a world as I hunted. Once, when I must have been two-thirds around the cosmos, I discovered a world that seemed just right, and yelled jubilantly in my fancied success. But closer observation showed it was already inhabited by strange life, volatile masses of poisonous living gas that would make life impossible there for my people.

The weird worlds that I saw in that epic and desperate voyage! Planets of horror, some of them, and others planets of unearthly beauty—yet none of them the world I must find. Hope was leaving me, for I had been weeks in flight. And though I had lost my bearings in the wilderness of galaxies I had come through, I knew that by now I must have almost completely circumnavigated the spherical cosmos and before long would approach my home galaxy. Before long, I must return to my waiting people with the black news that I had failed.

With that awful despair crushing my soul, I watched as my ship approached still another galactic swarm of stars. Dully, hopelessly, I stared as my clicking, automatic instruments took up their almost futile work of searching its recesses. Leadenly I took the records of their search and examined them.

Suddenly my heart bounded in my breast, as I examined one record. I dashed to the instruments, trembling, focusing one so that I might verify the thing with my own eyes. Then utter thanksgiving and wild joy flooded my brain, for through the instrument I looked at long last upon the kind of world I sought—a green, warm world with plentiful air and water, well suited for man. I had come almost clear around the cosmos to find that world, but I had found it!

I headed the ship toward the yellow sun of that world. There were several other planets but I had eyes only for that green world of new hope as I shut off the dimension shifting apparatus and landed my ship on its grassy surface. And when I stepped out of the ship and stood in warm sunlight and balmy air, my heart expanded.

Around me lay a perfect landscape, a parklike rolling green plain dotted with tall clumps of vegetation. Little streams ran through it and insects buzzed, but there was no other life. It was an empty world, waiting for man.

And I, Ran Argal, had found it. I had saved the human race, my people, Neela. I had only to speed from here to frozen Earth with the great glad news, and in ships like mine they could all come and settle here, take up life anew, saved from the icy glaciers.

I ran back toward my ship, eager to

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carry the news to Earth and my waiting people. Before I reached the ship, I stopped and stared at the distant horizon. There at the skyline rose a green mound that somehow looked too regular in shape to be natural. Wondering if it was a sign that there had once been intelligent life on this world, I went toward it.

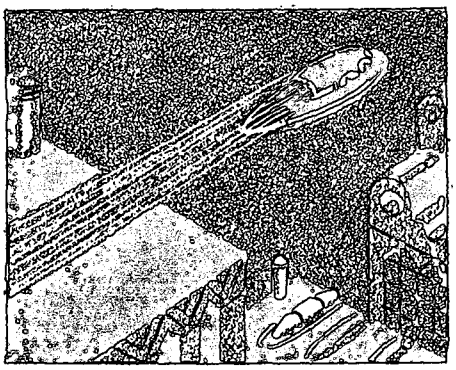
The mound I found to be perfectly square, when I reached it. It was obviously the ruins of an ancient, mighty building, covered now by the soil and grass. Even yet, a few crumbling blocks of black marble projected through the soil. There were characters of some sort graven on one of them, half decipherable, and I bent to examine them.

AS I read them, unutterable stupefaction seized me. For those characters were the letters of the language used by my own people, back on Earth. And they spelled two words, *"of Khlun."*

Then black horror of the cosmos thundered down on my brain as I understood.

The weary weeks I had spent in circumnavigating the cosmos—they had been only weeks in that different dimension frame in which I traveled, but had been long ages in the rest of the universe!

And during those ages, Neela and Lun Lor and all my people of Khlun had died vainly waiting for me, and the glaciers had rolled across Khlun and destroyed it, and then in long time had rolled back again and left the world warm and green. Yes, this world that I had come around the whole cosmos to find, this world whose people had long ago vanished forever—was my own Earth!



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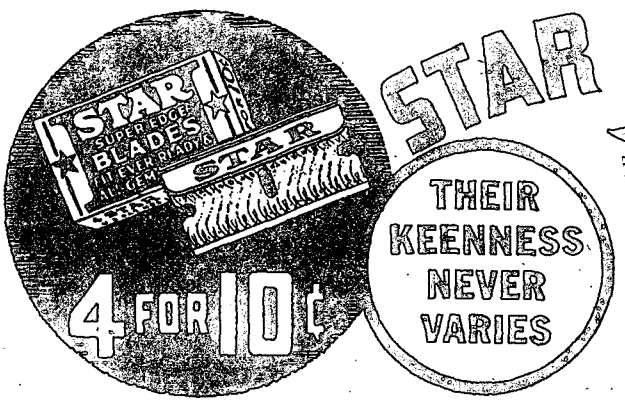

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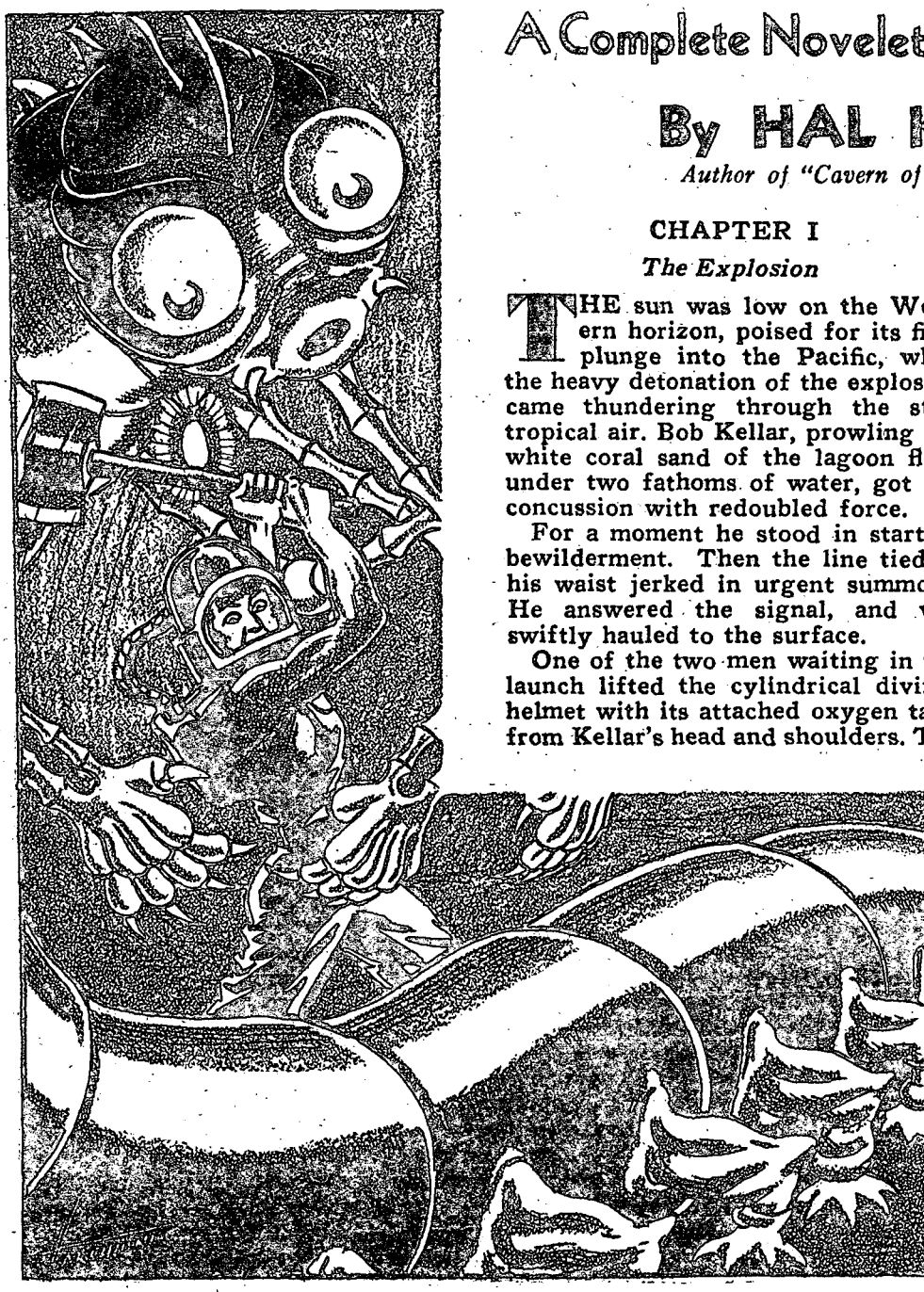
MAN-JEWELS

A Complete Novelette

By HAL K.
Author of "Cavern of the



CHAPTER I

The Explosion

THE sun was low on the Western horizon, poised for its final plunge into the Pacific, when the heavy detonation of the explosion came thundering through the still, tropical air. Bob Kellar, prowling the white coral sand of the lagoon floor under two fathoms of water, got the concussion with redoubled force.

For a moment he stood in startled bewilderment. Then the line tied to his waist jerked in urgent summons. He answered the signal, and was swiftly hauled to the surface.

One of the two men waiting in the launch lifted the cylindrical diving-helmet with its attached oxygen tank from Kellar's head and shoulders. The

Giant Worm-Beings from Beyond the Solar

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FOR XOTHAR

of Interstellar Invaders

WELLS

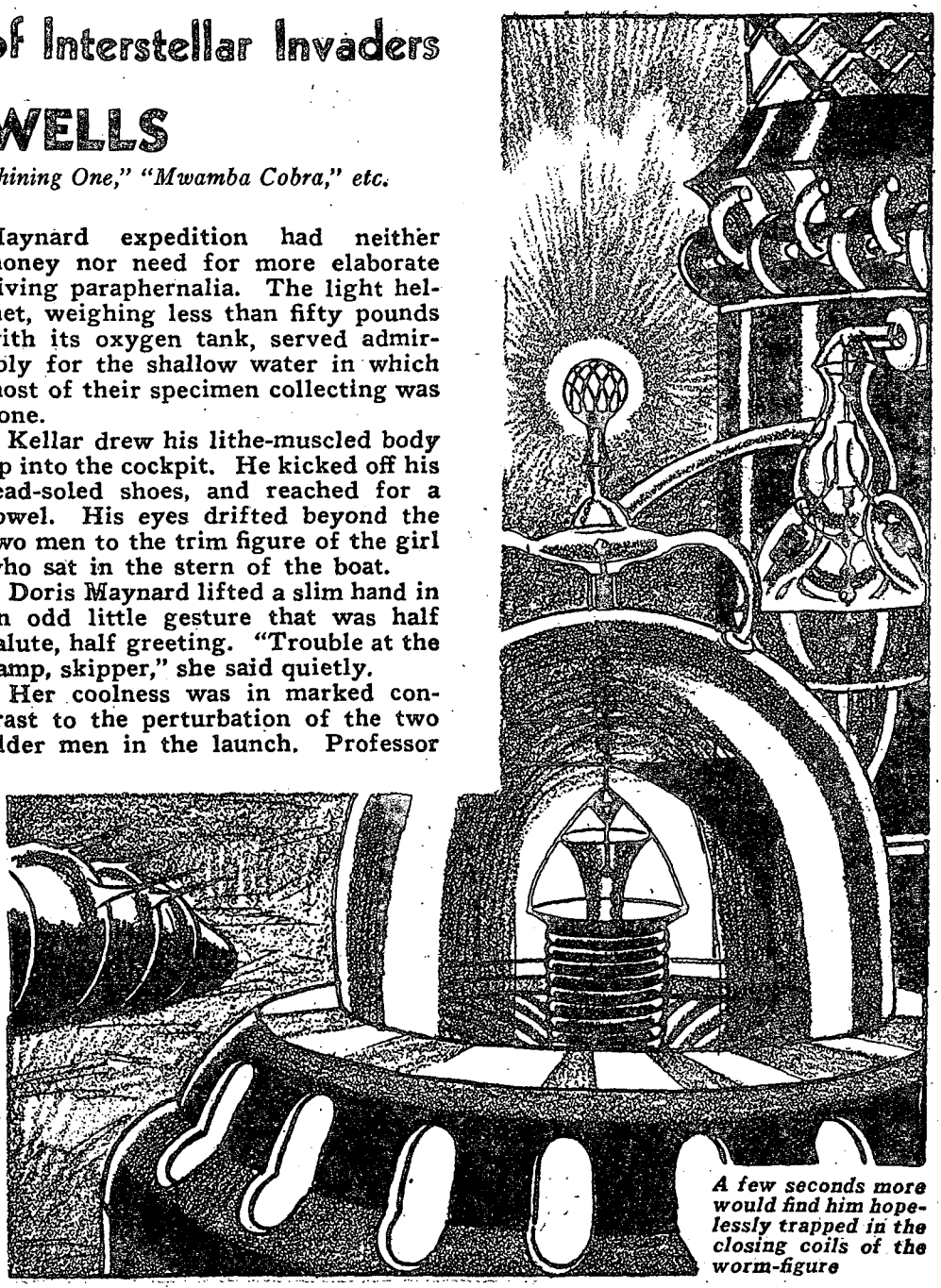
Shining One," "Mwamba Cobra," etc.

Maynard expedition had neither money nor need for more elaborate diving paraphernalia. The light helmet, weighing less than fifty pounds with its oxygen tank, served admirably for the shallow water in which most of their specimen collecting was done.

Kellar drew his lithe-muscled body up into the cockpit. He kicked off his lead-soled shoes, and reached for a towel. His eyes drifted beyond the two men to the trim figure of the girl who sat in the stern of the boat.

Doris Maynard lifted a slim hand in an odd little gesture that was half salute, half greeting. "Trouble at the camp, skipper," she said quietly.

Her coolness was in marked contrast to the perturbation of the two older men in the launch. Professor



A few seconds more would find him hopelessly trapped in the closing coils of the worm-figure

System Descend to Earth, Armed with Death!

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Maynard, Doris' father and the original organizer of the expedition, was fussing about the cockpit, his wiry little body vibrant with nervous excitement. Eli Dexter's usually ruddy face was pale with worry, and his pudgy fingers were shaking as he crammed tobacco into the blackened bowl of his pipe.

Bob Kellar grinned as he kicked the motor into life. Nice old boys, both of them, and models of efficiency in their class-rooms back on the campus of the university, but here on this isolated speck of an island in the South Pacific they were hopelessly out of their element. You couldn't blame them if they went a little haywire in the face of an unexpected emergency.

"Are you sure the explosion was at the camp?" Kellar asked.

"Certainly it came from the camp!" Maynard snapped irritably. "Where else could it have come from? Outside our party, there isn't another living soul on the island."

"But all our party may not be at the camp," Dexter argued. "Ward, Barton, and Weston left for the other side of the island this morning, and expected to be gone all day."

"And what could they have carried with them to produce an explosion like that?" Professor Maynard's voice was caustic. "Hatch and Sherman are in camp working on seaweed specimens, and the only possible explosive on the island was right there beside them."

"You mean the gasoline?" Bob Kellar asked.

Maynard's white-haired head nodded sharply in assent.

KELLAR'S eyes were grave as he leaned over and tried to coax a little more speed out of the motor. Their entire reserve supply of gasoline for the launch had been stored in one large metal drum. If it had let go, the resulting explosion could very easily have wiped out the camp, and everyone in it.

They had to swing far to sea to round a maze of surf-whitened coral reefs, and at the best speed the laboring motor could achieve it was a full hour's run back to camp.

The sun dropped below the horizon. The twilight deepened with tropical swiftness into velvet dusk, lighted by the soft rays of a moon riding high in the Eastern sky. There was a faint chill in the air that made Bob Kellar draw a pair of dungaree slacks over his bathing suit, and lace on a pair of shoes.

Doris Maynard huddled silently on the seat beside Kellar. He threw a protecting arm over the girl's slim shoulders. With her black bobbed hair and softly tanned, oval face, Doris looked like some exquisite little doll figure fashioned from pale gold and jet. She seemed even smaller beside Bob Kellar's tall, broad-shouldered bulk. Two years as an assistant instructor in botany had not softened the splendid physique that had made Kellar a nationally famous halfback in his undergraduate days.

They swung into the small bay where the camp had been pitched. The utter lack of lights or any other sign of life on the beach sent fear closing around their hearts in a chill shroud. They neared the shore, and their fears became grim certainty.

The camp was completely wrecked. The tents were leveled. The work-tables were piles of splintered wood. A twisted bulk of metal lying in a gaping crater marked the spot where the big gasoline drum had been half-buried in the sand. Sprawled face downward on the beach near the water's edge was the body of a man.

They were out of the boat the instant it touched the shore. Kellar reached the sprawled figure first, and gently turned it over. It was Hatch, one of the two men who had been working on specimens at the camp. He had been horribly injured. Blood seeped from a score of gaping wounds. His thin face was skull-like with the gauntness of approaching death, but a faint spark of life still lingered in his shattered body.

His eyelids fluttered open. For a moment he stared dazedly up at the faces bending over him. Then memory seemed to surge back into his numbed

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brain. His eyes dilated in an expression of stark horror.

"WORM monsters! Giant red worm-things in amber bubbles!" Hatch's voice gurgled huskily through the death-rattle in his throat. The effort at speech was sapping his last reserve. Realizing it, he fought desperately to tell his message in the few brief seconds remaining to him.

"Worm-things—I tell you—wearing great jewels of blazing fire— They attacked us—I tried to fight them off —with rifle—cap was off gas drum—bullet hit metal and spark fired the gas—explosion got one of them—others captured Sherman—and—"

Hatch's tortured whisper faded to a moan, then died. Maynard felt for a pulse in the limp wrist.

"He is dead!" he said, his voice stunned and shaken. "Poor devil! The shock of his injuries must have driven him completely out of his head. He was raving in wild delirium, of course."

"He was speaking the cold truth!" Bob Kellar's voice was clipped and hard. "Look over there!"

They followed the direction of his pointing finger. Strewn on the beach at the water's edge between Hatch's body and the wrecked gasoline drum was a bizarre pile of softly gleaming amber shards. And splattered among them were the grisly fragments of what had apparently been a large pulpy animal organism of some kind!

They secured electric torches from the launch and explored the scattered débris with emotions that swiftly changed from bewildered amazement to stark dread.

"I can't understand it!" Maynard shook his white head dazedly. "The curvature of these fragments indicates that they came from a globe that must have been at least six feet in diameter. But the nature of the amber material itself is so utterly unlike anything I've ever seen that I couldn't hazard a guess as to whether it is crystal, vegetable, or even animal, for that matter."

"But these pieces," Maynard shuddered as he indicated one of the blobs of fleshy material, "are undoubtedly animal in the sense that they came from a living organism. The incoming tide washed so much of the débris to sea before we got here that it is impossible to draw any accurate conclusions regarding either the size or the shape of the thing the pieces originally came from. But one thing is certain; the creature, whatever it was, was horribly different in every respect from anything ever known to science!"

"Wait a minute!" Eli Dexter broke in suddenly. "There's something else there in the sand—something shiny!"

The pudgy little biologist knelt for a moment, dug something out of the sand, and straightened up again with the object in his hand. His three companions crowded close around him, then drew in their breaths in sharp gasps of amazement at sight of the thing that shone in eerie beauty in the white rays of the electric torch.

It was a perfect ovoid, six inches in diameter around its long axis. The flawless symmetry of its curving lines was broken only at one of the smaller ends, where an eyelet of black metal had been set into the crystal material. In color and texture, the thing was oddly changeable. Outside the direct rays of the light, it looked like an opaque piece of lustrous ebony, but when the light was played directly upon it the black crystal became semi-translucent, revealing a central core that blazed with opalescent hues from a thousand tiny facets.

THE thing was beautiful, yet in its unearthly loveliness there was an intangible aura of something so abysmally and malevolently alien that for long minutes the little group stared at it in tense silence. Far back in the inner recesses of each of their dread-numbed brains was a thought struggling to rise to the surface of consciousness, a thought of such mad horror and incredible possibilities that the conscious brain shrank from admitting its existence.

It was Doris who finally broke the silence. "It's insane, I know," she gasped in a voice that was barely

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above a whisper, "but there's something about that ghastly thing that is —that is Clyde Weston!"

Cold dread closed in a somber pall over Bob Kellar's groping brain as he realized the weird truth of what Doris had said. Utterly alien as the giant jewel was in every respect, there was yet something about the opalescent fires of its heart that was familiar—a vague, nameless quality that suggested Clyde Weston, the youngest of the trio who had gone over to the other side of the island that morning. The impression was a tenuously intangible thing that defied direct analysis, more a matter of spiritual suggestion than any physical resemblance. It was almost as though by some eldritch art the very soul of Weston had been imprisoned in the glowing heart of the malevolently beautiful gem.

Eli Dexter's breath hissed in a sudden gasp. "The thing's beginning to tingle in my hand!" he exclaimed. "It feels like the shock of a weak electrical current. And look—it's glowing now with a new light of its own!"

The opalescent hues of the jewel's core were swiftly changing to a lurid and malignant scarlet. Dexter switched the electric torch off, but still the heart of the gem glowed in ruddy fluorescence. The crimson witch-fire flamed steadily brighter for a moment, then settled into a steady glow of unwinking brilliance.

They stared at the blazing crystal in a taut silence that was broken with startling abruptness when a heavy missile thudded into the sand at their feet. They leaped back from the object in blind panic, then saw that it was merely a piece of dead tree limb. A second piece came hurtling through the air, and this time they discovered its apparent source.

The tall figure of a man was standing near the place where the beach merged into the forest of the island's interior. The distance was too great to distinguish details in the moonlight, but the tall, gaunt form was unmistakable. It was Ward, another of the three who had left camp that morning.

Maynard started to hail the figure, then choked back his cry as Ward's arm lifted in a silent gesture, beckoning them to him. As they hesitated, Ward beckoned again, this time with imperious urgency.

"Come on!" Bob Kellar said. "Ward must have stumbled onto something."

CHAPTER II

Black Bubble of Death

THE party hastened across the beach. To their surprise, Ward did not wait for their arrival. They were barely halfway to him when he turned and vanished back into the deep shadows of the forest. They hurried their pace in an effort to keep from losing him in the darkness under the trees.

They caught another momentary glimpse of his tall figure in a small area of moonlight far ahead of them. Again he beckoned them imperiously on, and again he vanished in the gloom. They pressed after him, their way leading up the wooded slope toward the island's interior.

The heavy shadows of the forest pressed in on every side, somber, menacing. For the first time since they had left home on this vacation specimen-collecting trip, Bob Kellar realized how helplessly isolated they were from the outside world. Until the island trading steamer returned to pick them up two weeks from now, they were as completely cut off from any posible help as though they were on some other planet.

They reached the spot where they had last seen Ward, then halted in momentary uncertainty. Their strangely acting guide had again vanished somewhere in the shadows.

"I don't like this!" Maynard muttered uneasily. "The man acts as though he were insane. Why on earth should he keep running away from us like this?"

Before anyone could answer, the tall figure appeared again in a small moonlit clearing some little distance ahead. This time as they hurried for-

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ward, Ward did not go on. Instead, he stood there with his back against a dead tree stump, awaiting them with the motionless rigidity of a statue.

He made no answer to their hails, even when they had entered the clearing and were within a dozen feet of him. They came to a sudden halt, vaguely realizing that there was something menacingly unnatural about the silent figure that stood so strangely motionless, with its head tilted oddly to one side as though listening.

MAYNARD threw off his brief hesitation with an impatient shrug of his shoulders, and stepped resolutely forward to grasp Ward's arm. The next instant he leaped back with a gasp of consternation. The slight touch of his hand had been enough to topple Ward's figure from its leaning position against the tree stump. The tall gaunt body pitched limply forward upon its face!

Maynard knelt over the body for a swift examination. When he rose slowly to his feet again, his face was drawn and white.

"He's dead!" Maynard announced. "His neck is broken. And from every indication *he has been dead seven or eight hours!*"

Horror surged through the hearts of the group as they realized the dread significance of Maynard's words. It had been no living thing that had beckoned them on into the forest. They had been following the eerie figure of a walking corpse!

Maynard's voice was tense. "We're up against something that—"

A metallic click from somewhere overhead cut his words off squarely in the middle of the sentence.

As Bob Kellar looked up, he had just time to catch a brief glimpse of a huge amber bubble floating above the clearing, with a fringe of rope-like tendrils dangling from it. Then all sight of the amber sphere was blotted out in a gush of dazzling blue-white radiance.

Kellar's muscles, responding with the split-second reaction of a trained athlete, sent him hurtling to one side in an instinctive leap to try to dodge the path of the down-rushing rays. He leaped clear of the rest of the group, but not quite far enough. The outer edge of the cone-shaped area of radiant force barely touched his shoulder as his body plunged on past it. The touch, slight as it was, spun his body like a chip caught in the blast of an airplane propeller.

He struck the ground with stunning force, rolled helplessly down a sharply slanting slope, then plunged into cool darkness. For a fractional second he plummeted downward through the blackness. Then his body struck with a shattering impact that brought instant oblivion.

CONSCIOUSNESS returned slowly to Kellar. Every muscle in his body ached in dull agony. Something was pressing with smothering force upon his legs and hips. He opened his eyes. For a moment he blinked dazedly upward at a narrow strip of star-studded sky visible between black rock walls before he realized where he was.

The clearing in the forest had ended abruptly on one side in a narrow cleft that slashed deep into the volcanic rock of the island. His leap to avoid the blue-white radiance had carried him to the steeply sloping edge of the cleft, and the momentum of his hurtling body had sent him plunging over the brink. He was lying on the bottom of the gash now, his body half buried in a slide of earth and rubble.

He clawed around him until he loosened the stuff enough to enable him to scramble to his feet. His body was a mass of bruises, but no bones were broken. He groped along the steep walls and found a place where he could climb back to the surface again.

The clearing was silent and deserted. Ward's body sprawled beside the stump, but its position had subtly changed since Kellar had seen it last. The arms and legs were spread and flattened against the ground like a steel shaving against the face of a powerful magnet.

The same odd phenomenon was visible everywhere in the clearing.

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The grass and other vegetation had been flattened by some irresistible force over the entire area where the blue-white radiance had struck. Some of the broken and bruised stems were beginning to straighten again now that the force was gone.

Kellar stared with grim eyes at the sprawled figure of Ward. He realized now the purpose behind the eerie use to which the dead body had been put. It had been a lure that had been utilized to draw the party into ambush where the overhead globe had lurked waiting to trap them.

The trap had worked so far as Dexter, Maynard, and Doris were concerned. All trace of them had vanished, and there was no way of even knowing in what direction they had been taken.

Kellar's jaw set in a hard line of purpose. Their way from the camp had led steadily upward toward the wooded ridge that marked the island's central point. The most logical place to search for the missing trio seemed to be to continue in that same direction.

He climbed steadily through the gloom of the forest for several hundred yards before he received the first intimation that he might be on the right track. It was a faint humming sound, so tenuously high in pitch that it was vibration rather than genuine sound. It came from a spot high on a wooded slope above him, where Kellar knew that the crest of the ridge fell sharply away on the other side in a vast circular basin, with walls that sloped sixty feet down to a level, treeless floor some three hundred feet in diameter.

Kellar hastened up the slope, then advanced more cautiously as he approached the rim. The odd vibration increased in volume with every step he took.

A FINAL moment of climbing brought him behind the corrugated trunk of a tall palm tree that grew on the depression's rim. He carefully stuck his head around the trunk to peer down into the basin, then froze in motionless rigidity, his stunned brain trying to realize the fantastic details of the incredible scene on the floor of the great bowl below him.

It was a scene from which even the normal air of Earth had vanished. In its stead was a giant hemispherical bubble of translucent black vapor, whose rounded top was on a level with where he stood and whose curved sides met the basin wall twenty feet below him.

The great hemisphere of dark vapor looked as fragile as a soap-bubble, yet its gleaming walls never moved in the stiff breeze that rustled through the trees on the basin's rim. Inside the shimmering walls of misty black was a vast area of death.

The thick growth of grass that had carpeted the basin floor was brown and sere, and dotted with the scattered bodies of night-flying birds and big, tropical moths. Small trees and bushes drooped limp and dead, as though blasted by lightning. Where the edges of the great bubble met the basin walls the line between life and death was as sharply cut as though made by a knife. Every tree branch and palm frond was withered and dead from the point where it entered the vapor.

In the center of the basin floor towered a tall mast of what looked like dark yellow crystal. It branched at the top in an intricate web of curved rods that suggested the skeleton of a giant umbrella, and it was apparently from the tips of these rods that the weird energy streamed to form the great black bubble of death.

The compact mass of mechanism grouped around the base of the mast was the source of the high-pitched vibrations that pulsed in the air, but the glowing coils and spinning parts that made up the apparatus were so infinitely complex and so utterly alien in their basic principles that Kellar could not even hazard a guess as to their method of operation.

Over against the wall of the basin to Kellar's left a colossal, dark grey globe reared its massive bulk sixty feet above the valley floor. In one side of the globe, a large circular port

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had been dropped open on hinges at its bottom, forming a steep gangplank down to the ground. From inside the open port a hooded projector resembling a searchlight flooded the floor of the basin with green-tinged radiance.

Between the globe and the mast-mechanism was another piece of apparatus, consisting of a small raised platform ringed on three sides by rows of tall, weirdly shaped crystal tanks containing various colored fluids. And on the level floor of the valley near the platform was a group of separate cells in which four members of the Maynard expedition were held in strange captivity.

EACH cell was an amber cylinder six feet in height and a yard in diameter. Huddled within the transparent cylinders were the dejected figures of Maynard, Doris, Dexter, and Sherman. The cells obviously contained a habitable atmosphere, for all four of the captives were alive and, so far as Kellar could determine, uninjured.

A sudden dimming of the greenish light drew Kellar's eyes back to the grey globe. A tall, grotesque figure, its details indistinguishable for the moment as it passed in front of the light-projector, had emerged from the interior of the globe and was gliding down the steep gangplank to the ground. Behind it came a second, and then a third.

The three figures reached the ground and stood clearly revealed in the green-tinged rays. Cold horror numbed Kellar's reeling brain as he gazed down with wide-staring eyes that tried vainly to comprehend the hideous details of monstrosities so utterly alien to this planet that they were beyond the real comprehension of any Earthly mind!

CHAPTER III

Giant Worms of Xothar

THEY remotely suggested the physical outlines of giant tomato worms. Their thick, pulpy bodies, a vivid scarlet in color, were close to twelve feet in length.

The terminal third of each body was supported on four pairs of short stubby legs, while the rest of the repulsive worm-shape towered upward in a massive segmented column that was as lithely flexible above its supporting base as the upreared figure of a swaying cobra. From each of three of the upper segments a pair of long arms dangled, jointed at elbow and wrist in grotesque parody of human members, and ending in appendages that suggested a strange blending of insect claws and human hands.

The bulbous heads of the upreared worm-things were capped with glistening black helmets of chitinous armor. Beneath each helmet, the "face" consisted of a small, ragged mouth-orifice, and two large, lidless eye-discs of dark purple. Suspended from a cord around each thing's throat-segment was a six-inch ovoid jewel that blazed in a breath-taking splendor of scarlet fire.

Two of the creatures went to the platform and began inspecting the short lengths of tubing that connected the crystal tanks. The third glided with serpentine grace to where the four prisoners were held in their amber cells.

It selected the cylinder containing Sherman, swung it aloft in one of its three pairs of arms, and carried it over to the platform. Sherman crouched, white-faced and motionless, on the floor of his crystal prison, watching with fear-dilated eyes as the worm-things snapped thin extension rods into place against the sides of the cylinder, anchoring it firmly upright in the center of the platform.

They then attached a length of flexible tubing to a tank that was filled with a pale pinkish fluid, and connected it with a small valve set in the top of Sherman's cell. One of the worm-things opened the valve. The pinkish liquid streamed down into the cylinder.

Its level rose swiftly, passing Sherman's waist, his neck, then surging on above his head until the entire cell was filled. The worm-thing at the

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valve shut off the flow from the tank, and stepped down off the platform to stand beside its two companions as they intently watched the eerie tragedy that went on inside the cylinder.

Sherman was standing upright now, clawing with one hand at his throat while his face purpled in his fight for breath. Then abruptly his features contorted in a new agony. The skin of his exposed face and hands began to glitter in the greenish light like parchment glazed with flakes of mica.

The process continued with startling speed. Bob Kellar's brain reeled as he realized the nature of the transformation that was occurring before his eyes. Under the chemical reaction of the nameless liquid that filled the cylinder, the living cells of Sherman's body were *crystallizing!*

SHERMAN'S clothing and shoes dissolved in dark feathery flakes, and drifted down to form a thin, ashy layer on the floor of the cell. Every inch of his exposed skin was seen to be a glittering mass of tiny crystalline facets.

The man was obviously suffering intolerable torture. He flung his crystal-encased body about in the smothering liquid in convulsive movements of agony. Something snapped in Bob Kellar's numbed brain. Rage surged through his heart in a scarlet flood that drowned every thought of caution or fear.

His eyes searched along the rim of the basin, seeking a possible weapon of any kind. A dozen feet to his left there was a thick length of dead tree branch that could be used as a club. He slipped over to it, picked it up, and, with his face set in a contorted mask of hate, turned to hurl himself down the steep slope.

His muscles tensed for the first step, then froze as a voice from somewhere behind him cried out in desperate urgency:

"Bob! Don't do it! One breath of that black vapor is instant death!"

As Kellar hesitated, the voice spoke again, hoarse with anxiety: "Get back down, you fool, before they see you!"

Sanity returned to Kellar's brain then, bringing realization of the mad futility of the thing he had been about to do. He crouched below the basin's rim and looked around for the source of the voice.

"Over here in these bushes!" The voice was weak now, as though the speaker's strength was nearly spent.

The bushes were in a shallow gully ten feet away from the basin's edge. Huddled under them was a crumpled body. The reflected glow of greenish radiance from the basin gave barely enough light for Kellar to recognize the drawn white face of Eric Barton, the third member of the group that had gone over to the other side of the island that morning.

As Kellar knelt beside Barton he was glad that the light was dim. It threw into merciful vagueness the details of the ghastly things that had been done to Barton's broken body. Where his legs had been were two glistening columns of granular crystals. Other crystalline growths cropped out like malignant tumors on the bare skin of his shoulders, arms, and chest. The only part of his figure left unscarred was his face.

"Rather a mess, isn't it?" Barton smiled wanly as he looked down at the grisly thing that had been his body. "Those devils had never tried their fiendish process on a human being before, so they used me for preliminary experiments. I was in that black bubble from the time they captured us this morning until they brought Dexter, Maynard, and Doris in tonight. They were through with me then, so they hurled me out here to die. But how did they miss getting you along with the rest? And where is Hatch?"

Kellar briefly told him of the tragedy back at camp, and the way in which he had dodged the blue-white ray by plunging down into the rock cleft.

BARTON nodded. "They probably thought you were killed or badly injured, and left you lying there. Dead tissue can't be crystallized, and bodies that had been injured

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result in imperfect jewels. Ward's neck was broken when they captured us, so his body was no good for jewel material. They used it tonight as a decoy to lure you folks into ambush. One of them manipulated it with cables from a flying bubble concealed in the forest, as a puppet doll is animated by strings."

"But what are they?" Kellar burst out. "Where do they come from? What is the horrible thing they're doing to human bodies?"

"They are visitors from far out in interstellar space," Barton answered. "Their home planet is a giant world they call Xothar, located deep in the heart of the Dark Nebula in Orion. Our astronomers have for years speculated as to the real nature of that inconceivably vast, opaque cloud. The black bubble of death down in the basin is a synthetic reproduction of the material that composes the Dark Nebula. It is neither gas, liquid, nor solid, but a strange blending of electrical and chemical elements that form a tenuous variety of matter that is completely unlike anything known to our science.

"Though instantly fatal to oxygen-breathing organisms, it is the essence of life to Xotharians. Our atmosphere is not only unbreatheable to their wormlike structures, but the very touch of it upon their tissues produces a corrosive effect like that of a strong acid.

"When they first placed me in an air-cell down there on the basin floor," Barton continued, "one of them made contact with me through a mechanism that permitted direct transference of thought images between our brains. It was a simple adaptation of the principle that all thought is in reality electrical. Such an instrument is child's play to a race as advanced as the Xotharians, who have mastered even the secret of gravity itself. Their voyages through space are accomplished by using the gravitational pull of the countless suns of the Galaxy. Their weapons and smaller vehicles are based upon gravitational control, increasing the pull of gravity many times or nullifying it entirely." His voice faltered.

Kellar silently nodded. That would explain the odd phenomenon of the blue-white radiance back in the clearing. The gravitational pull of the earth had been enormously increased in the area flooded by the ray. Vegetation had been crushed and broken under its own abnormally increased weight, and Maynard, Dexter, and Doris had been pinned immovably helpless against the ground for the hovering Xotharians to pick up at their leisure.

BARTON'S voice had been steadily growing weaker, but he rallied his failing strength with an obvious effort and went on:

"The Xotharians are masters of electricity in all its phases, but it is in the field of cosmic chemistry that their science has advanced to weird and incredible powers. It is through the intricate processes of their cosmic chemistry that the fiendishly beautiful objects are produced which are the most prized possessions of Xothar—the great crystalline jewels that are secured from the living bodies of organisms dwelling upon planets with oxygen-hydrogen atmospheres such as that of the Earth.

"All such organisms have protoplasmic structures based primarily upon carbon, and the Xotharian chemistry acts by first crystallizing that protoplasm, then condensing the crystals until the final product is an ovoid some six inches around its long axis. It is a deep ebony in hue when seen by itself, but glows with fluorescence when in the vicinity of a living Xotharian. The fluorescent action increases to a veritable blaze of scarlet fire when the gem is in actual contact with the tissues of a Xotharian body."

Kellar nodded. "We found one of the jewels back at the camp. It must have been worn by the thing that was killed when the gas drum exploded. It reminded us in some horrible way —of Clyde Weston."

"It *was* Clyde Weston," Barton answered grimly. "They used their damnable process on him late this afternoon. It was horrible! He still

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lived for long tortured minutes after the first reaction had changed his body until it was nothing but a solid oval mass of granular crystals. Then they began the second reaction, and the diffuse crystalline mass began slowly condensing, contracting, and deepening in color until it finally became the finished jewel. Weston had died long before that, yet in some intangible way there was an indelible imprint of his personality, or perhaps his soul, imprisoned in the heart of that evil gem!"

Barton's husky voice had weakened until it was barely a whisper. Kellar had to lean low over him to catch the faint words. The dying man's lips twisted in a grimly bitter smile.

"Just as the pearling fleets of Earth go out to seek beds of jewel-bearing mollusks," Barton whispered, "so do the fleets of Xothar go out from the Dark Nebula to seek jewel-bearing organisms on the gas-free planets beyond. Our fleets sail the seas, those of Xothar voyage through the ether of interstellar space. Our pearlers descend into the water in bathing suits, while the Xotharians encase themselves in the protection of their amber flying bubbles.

"The grey globe there in the basin is a tiny and feeble affair when compared to the colossal bulk of Xothar's regular 'pearling' ships. This one was a lone vagabond of space, comparable to one of our small tramp-steamers. Its original crew consisted of only four Xotharians. Blind chance led to its being the first of its kind ever to visit Earth. It was returning home from one of the usual Xotharian raiding grounds among a race of manlike beings that people the planets of Sirius, when the blundering of a drunken navigator swung it far enough out of its path to enter the range of our Sun's system of planets.

"They reconnoitered Earth and found it swarming with possible jewel material. Not knowing the power of Earthly weapons, they passed up the more populated areas, and made their initial attack on our party here on this isolated island. The harm has been done now. The higher the source-organism, the finer the jewel, and human beings have proved the best material that Xotharians have found in eons. This single globe will speed back to spread the news, and countless thousands of giant ships will come hurtling through space in an attack that will wipe mankind off the planet.

"Ironical, isn't it, Bob?" Barton gasped weakly. "Earth, with all its vaunted science and culture—is to those worm-shaped monstrosities nothing but a cosmic oyster-bed—teeming in animal organisms whose bodies will yield blazing jewels—to adorn — the scarlet hordes — of Xothar!"

Barton's eyelids slowly closed. He caught his breath in a last sharp gasp of pain, then his taut features relaxed in the pallor of death. Kellar rose stiffly to his feet. He stood looking down at the still figure for a moment of grief-stricken silence, then turned and made his way back to the basin's rim.

CHAPTER IV

The Grey Globe's Last Flight

THE three Xotharians were still grouped around the chemical apparatus, and Doris, Dexter, and Maynard still crouched in their cylindrical amber cells. The only thing that had changed since Kellar last looked down into the basin was the object in the fluid-filled cylinder on the platform. Every trace of anything human had vanished now from the crystalline horror that had once been Sherman. It floated free in the liquid, a great egg-shaped mass of granular crystals, four feet in height.

One of the Xotharians was carefully manipulating the trickle of a dark liquid through a tube into the cylinder. As the drops blended with the fluid already in the cell, the crystalline mass was shrinking visibly, contracting, condensing, its surface becoming smoother, and its color deepening from pink to red-black.

Kellar's eyes roved on to where the slender crystal mast towered upward

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from the intricate assembly of mechanism vibrating at its base. There was the single vulnerable point in the defenses of the mighty worm-figures from the Dark Nebula. If that mast were shattered, its collapse would in all probability result in the destruction of the entire bubble of noxious black vapor.

THE Xotharians were a good seventy feet from the open door of their space globe. If the atmosphere of Earth was as virulently poisonous to those worm-bodies as Barton had claimed, there was an excellent possibility that the collapse of the bubble might bring death to them before they could gain the shelter of the globe.

Kellar thought of hurling a stone down into the basin, trusting to luck that the missile might hit a vital part of the mast-mechanism, then promptly dismissed the idea. The distance was too great. The odds against success were a thousand to one.

The only plan that offered any real hope of success was to get close enough to the mast to wreck it with a club. But no man living could possibly hold his breath long enough to cover even half the distance through the deadly vapor.

Then suddenly a startling thought flashed into Kellar's desperately searching brain. There *was* a way by which he might enter the bubble's lethal mists, and still live. In the launch back at camp was the diving-helmet with its portable oxygen tank. It protected its wearer under solid fathoms of sea-water. There was no reason to believe that it would not give similar protection against the poisonous vapors of the black bubble.

Kellar turned from the basin's rim, and on swiftly flying feet started back to camp. It was a race against time now. The process of crystallizing Sherman's body had apparently been nearly completed. As soon as it was finished, the chemical platform would be ready for the next victim. The dread thought that the one selected might be Doris lashed Kellar's muscles to still greater speed.

The way was downhill, and his racing feet ate up the distance with the long smooth strides of a trained athlete. He reached the camp, got the diving-helmet and oxygen tank from the cockpit of the launch, then hesitated momentarily, looking around for a possible weapon of some kind.

The only firearm the expedition had possessed was the rifle lying in the sand, beside Hatch's crumpled body and its firing mechanism was wrecked beyond repair. Then Kellar's eyes glinted in sudden satisfaction as he glimpsed a double-bitted axe in the débris.

He snatched the axe up and, with the diving equipment flung over his shoulder, started back through the woods for the basin. The return trip, with every foot of it uphill and the diving equipment pressing down upon his shoulders with ever-increasing weight, became a grim nightmare in which he fought with laboring lungs and aching muscles to drive his weary legs on with undiminished speed.

His last reserve of strength was nearly spent when he finally flung himself down, gasping for breath, behind the shelter of a low bush on the basin's rim. His first frantic look down at the basin floor brought a mingling of relief and fear. Doris and the other two prisoners were still alive and unharmed in their amber cells, but the moment loomed nearly at hand when the crystallizing platform would be ready for another victim.

THE chemical process upon Sherman's body had been completed. The liquid had been drained from the cell, and the finished product now lay on the bottom of the cylinder—a six-inch jewel of malevolent beauty, that waxed and waned in crimson fire as the bodies of the Xotharians approached it or retreated from it. One of the worm-figures opened the hinged bottom of the cylinder. As the creature lifted the jewel out in one of its grotesque hands, the gem's fluorescence increased to a dazzling splendor of ruddy flame.

Another of the Xotharians started over to get a new cylinder from the

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trio of prisoners' cells. Kellar came lurching to his feet in frantic haste. The nearest cell to the advancing worm-thing was the one in which Doris crouched in white-faced dread!

Kellar strapped the oxygen tank on his back with feverish fingers. He crammed the metal helmet down over his head, snapped its elastic collar tightly in place around his throat, and turned on the valve releasing the oxygen.

There was no time for any coherent plan. The only possible chance to avert the horrible fate threatening Doris was to hurl himself down the steep slope to the basin's floor and stake everything on one mad rush for the vapor-producing mechanism at the base of the crystal mast.

The trunks of trees gave him fair cover for the first few yards of his progress. The shimmering wall of the black bubble loomed just ahead of him. It parted as his body entered, then flowed instantly into place again behind him.

He felt a faint stinging sensation on the exposed skin of his hands, as though they were immersed in a weak solution of acid, but beyond that the tenuous mist in which he was submerged had no apparent effect. The oxygen flowed sweet and free from the tank to his lungs, untainted with any trace of noxious vapor.

Another moment of plunging headlong down the steep slope brought him to the treeless expanse of the basin's floor. Luck was with him. None of the Xotharian eyes were for the moment looking his way. Axe in hand, Kellar hurled himself across the dead grass of the basin floor with every ounce of speed that he could summon from his flashing feet.

He had covered barely half the distance to the mast when a sharply sibilant cry ringing through his metal helmet told him that he had been discovered. There was a flashing streak of scarlet to one side of him as the nearest Xotharian raced to intercept him. Kellar was still twenty feet away from the mast-mechanism when the Xotharian, gliding over the ground with the smooth speed of a cobra, flung its tall body in front of him, effectually barring his way.

Kellar swept the axe over his head in both hands, then brought it hurtling down in a savage blow at the exposed segments of the upreared worm-body. The heavy blade struck with a force that would have shorn through any animal tissues born on Earth, but it rebounded harmlessly from the Xotharian's glossy red hide, as though it had struck live rubber.

The force of the recoil nearly tore the axe from Kellar's grip. Two of the grotesque hands lashed out to grasp him. His frantic leap to one side evaded the clutching talons by inches. Towering shapes of crimson on each side of him told him that the other two Xotharians were closing in to help in his capture.

A FEW seconds more would find him hopelessly trapped in the swiftly closing triangle of giant worm-figures. He feinted as though to strike again at the Xotharian in front of him. The segmented trunk dodged smoothly to one side. Kellar changed the direction of his swinging axe with split-second speed, and sent it hurtling with all his strength at the mechanism clustered around the base of the crystal mast.

The Xotharian snatched at the flying missile, but too late. The axe struck squarely in the midst of the maze of glowing coils and spinning parts. There was a metallic scream of shattered gears. Livid blue flame crackled as wires short-circuited. The tall mast splintered to brittle crystal fragments.

The vast bubble of black vapor collapsed with the flashing speed of a bursting soap-bubble. There was a brief second while tenuous shreds of dark mist dissipated in the brisk breeze that came rushing into the basin, then the air was completely clear.

Through the metal of Kellar's helmet he heard the yammering cries of agony that gurgled from the stricken worm-things as they writhed in the first touch of an atmosphere that was deadly poison to their organisms.

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They turned and in desperate haste started for the shelter of their space globe, but the lithe speed of their movements was already gone. They dragged their drooping bodies along with ever-increasing slowness, groping awkwardly ahead of them with outflung arms like things stricken suddenly blind.

The shimmering wall of a smaller bubble of black vapor was visible behind the green light in the globe's interior. If the Xotharians once gained that haven, with its life-giving vapor and store of unknown weapons, Kellar knew that his victory would be short-lived. The axe gleamed on the ground beside the shattered mast-mechanism. He snatched the weapon up, and sprinted to head off the fleeing worm-things.

No longer were their segmented scarlet bodies shielded by hides of impenetrable toughness. The outer skin of the thick trunks was swiftly blackening and softening from the virulently corrosive action of the alien atmosphere. Kellar's first blow struck deep into the pulpy mass of the worm-shape nearest him.

The Xotharian writhed to one side in a sluggish effort to escape. Kellar struck again, and viscous black ichor gushed as the axe nearly severed the thick trunk. The broken body slumped in a heap that writhed feebly for a moment, then was still.

Kellar leaped to intercept the remaining two. His weapon flashed in a swinging arc that split the black-crowned head of one, but the blade caught momentarily in the tough, chitinous tissues. His slight delay in freeing the axe was just long enough to allow the last Xotharian to drag itself up the gangplank into the globe.

The open port slammed shut. An instant later the globe shot skyward with a blast of air that sent Kellar spinning backward like a leaf in a hurricane.

HE staggered to his feet again and looked up, wondering in dread what would be the nature of the retaliatory attack the worm-thing in the globe would make. Then dread quickly gave way to hope. The Xotharian had apparently reached the shelter of the globe too late. Setting the big sphere in flight must have been its last dying effort.

The globe was swooping through the moonlit sky now in wildly aimless gyrations that gave mute evidence of the fact that there was no longer any conscious being at its controls. It shot out to sea with cometlike speed, doubled sharply back again, and hovered almost motionless for a moment. Then, from a height of three hundred feet, it dived straight for the rocky cliffs along the island's far shore.

A blinding sheet of ruddy flame flared high into the sky, followed by a terrific explosion that shook the ground under Kellar's feet. Fragments from the shattered globe rained in a hissing shower down upon the tops of the trees. Then everything was silent.

Relief surged in a mighty wave through Bob Kellar's heart. The little group of survivors on the island was safe now from the crystalline doom. And the threat of annihilation no longer faced Earth's teeming millions, for no living thing could possibly have survived the blasting explosion that marked the grey globe's crash.

There would be no messenger to return to Orion's Dark Nebula with the fatal story of this planet's tempting riches in source-material for the hideously beautiful man-jewels of Xothar.

John W. Campbell, Jr., Arthur Leo Zagat, Edmond Hamilton, the Late Stanley G. Weinbaum, and Many Others in the Next Issue

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RHYTHM of the SPHERES

A World Where Robots Reign—and the Last Poet Strikes Out for Freedom!

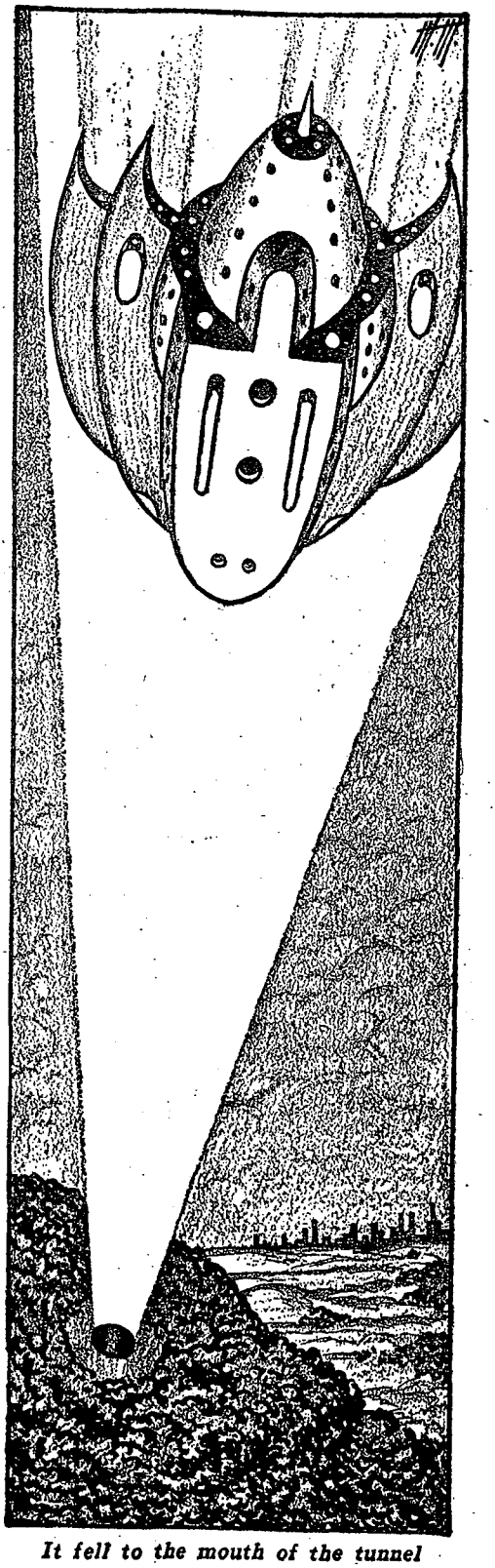
By A. MERRITT

Author of "The Moon Pool," "Burn, Witch, Burn!" etc.

NARODNY, the Russian, sat in his laboratory. Narodny's laboratory was a full mile under earth. It was one of a hundred caverns, some small and some vast, cut out of the living rock. It was a realm of which he was sole ruler. In certain caverns garlands of small suns shone; and in others little moons waxed and waned as the moon waxed and waned over earth; and there was a cavern in which reigned perpetual dawn, dewy, over lily beds and violets and roses; and another in which crimson sunsets baptized in the blood of slain day dimmed and died and were born again behind the sparkling curtains of the aurora.

And there was one cavern ten miles from side to side in which grew flowering trees and trees which bore fruits unknown to man for many generations. Over this great orchard one yellow sunlike orb shone, and clouds trailed veils of rain upon the trees and miniature thunder drummed at Narodny's summoning.

Narodny was a poet—the last poet. He did not write his poems in words



It fell to the mouth of the tunnel

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but in colors, sounds, and visions made material. Also, he was a great scientist—the greatest in his peculiar field. Thirty years before, Russia's Science Council had debated whether to grant him the leave of absence he had asked, or to destroy him. They knew him to be unorthodox. How deadly so they did not know, else after much deliberation, they would not have released him. It must be remembered that of all nations, Russia then was the most mechanized; most robot-ridden.

Narodny did not hate mechanization. He was indifferent to it. Being truly intelligent he hated nothing. Also he was indifferent to the whole civilization man had developed and into which he had been born. He had no feeling of kinship to humanity. Outwardly, in body, he belonged to the species. Not so in mind. Like Loeb, a thousand years before, he considered mankind a crazy race of half-monkeys, intent upon suicide. Now and then, out of the sea of lunatic mediocrity, a wave uplifted that held for a moment a light from the sun of truth—but soon it sank back and the light was gone. Quenched in the sea of stupidity. He knew that he was one of those waves.

HE had gone, and he had been lost to sight by all. In a few years he was forgotten. Unknown and under another name, he had entered America and secured rights to a thousand acres in what of old had been called Westchester. He had picked this place because investigation had revealed to him that of ten localities on this planet it was most free from danger of earthquake or similar seismic disturbance.

The man who owned it had been whimsical; possibly an atavism—like Narodny, although Narodny would never have thought of himself as that. At any rate, instead of an angled house of glass such as the thirtieth century built, this man had reconstructed a rambling old stone house of the nineteenth century. Few people lived upon the open land in those days; and they had withdrawn into the confines of the city-states.

New York, swollen by its meals of years, was a fat belly of mankind still many miles away. The land around the house was forest-covered.

A week after Narodny had taken the house, the trees in front of it had melted away leaving a three-acre, smooth field. It was not as though they had been cut, but as though they had been dissolved. Later that night a great airship had appeared upon this field—abruptly, as though it had blinked out of another dimension. It was rocket-shaped but noiseless. And immediately a fog had fallen upon airship and house, hiding them. Within this fog, if one could have seen, was a wide tunnel leading from the air-cylinder's door to the door of the house.

And out of the airship came swathed figures, ten of them, who walked along that tunnel, were met by Narodny and the door of the old house closed on them.

A little later they returned, Narodny with them, and out of an opened hatch of the airship rolled a small flat car on which was a mechanism of crystal cones rising around each other to a central cone some four feet high. The cones were upon a thick base of some glassy material in which was imprisoned a restless green radiance.

Its rays did not penetrate that which held it, but it seemed constantly seeking, with suggestion of prodigious force, to escape. For hours the strange thick fog held. Twenty miles up in the far reaches of the stratosphere, a faintly sparkling cloud grew, like a condensation of cosmic dust.

And just before dawn the rock of the hill behind the house melted away, like a curtain that had covered a great tunnel. Five of the men came out of the house and went into the airship. It lifted silently from the ground, slipped into the aperture and vanished. There was a whispering sound, and when it had died away the breast of the hill was whole again. The rocks had been drawn together like a closing curtain and boulders studded

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it as before. That the breast was now slightly concave where before it had been convex, none would have noticed.

For two weeks the sparkling cloud was observed far up in the stratosphere, was commented upon idly, and then was seen no more. Narodny's caverns were finished.

Half of the rock from which they had been hollowed had gone with that sparkling cloud. The balance, reduced to its primal form of energy, was stored in blocks of the vitreous material that had supported the cones, and within them it moved as restlessly and always with that same suggestion of prodigious force. And it was force, unthinkably potent; from it came the energy that made the little suns and moons, and actuated the curious mechanisms that regulated pressure in the caverns, supplied the air, created the rain, and made of Narodny's realm a mile deep under earth the Paradise of poetry, of music, of color and of form which he had conceived in his brain and with the aid of those ten others had caused to be.

NOW of the ten there is no need to speak further. Narodny was the Master. But three, like him, were Russians; two were Chinese; of the remaining five, three were women—one German in ancestry, one Basque, one an Eurasian; a Hindu who traced his descent from the line of Gautama; a Jew who traced his from Solomon.

All were one with Narodny in indifference to the world; each with him in his viewpoint on life; and each and all lived in his or her own Eden among the hundred caverns except when it interested them to work with each other. Time meant nothing to them. Their researches and discoveries were solely for their own uses and enjoyments. If they had given them to the outer world they would only have been ammunition for warfare either between men upon Earth or Earth against some other planet.

Why hasten humanity's suicide? Not that they would have felt regret at the eclipse of humanity. But why trouble to expedite it? Time meant nothing to them, because they could live as long as they desired—barring accident. And while there was rock in the world, Narodny could convert it into energy to maintain his Paradise—or to create others.

The old house began to crack and crumble. It fell—much more quickly than the elements could have brought about its destruction. Then trees grew among the ruins of its foundations; and the field that had been so strangely cleared was overgrown with trees. The land became a wood in a few short years; silent except for the roar of an occasional rocket passing over it and the songs of birds which had found there a sanctuary.

But deep down in earth, within the caverns, there were music and song and mirth and beauty. Gossamer nymphs circled under the little moons. Pan piped. There was revelry of antique harvesters under the small suns. Grapes grew and ripened, were pressed, and red and purple wines were drunk by Bacchantes who fell at last asleep in the arms of fauns and satyrs. Oreads danced under the pale moon-bows, and sometimes Centaurs wheeled and trod archaic measures beneath them to the drums of their hoofs upon the mossy floor. The old Earth lived again.

Narodny listed to drunken Alexander raving to Thais among the splendors of conquered Persepolis; and he heard the crackling of the flames that at the whim of the courtesan destroyed it. He watched the siege of Troy and counted with Homer the Achaean ships drawn up on the strand before Troy's walls; or saw with Herodotus the tribes that marched behind Xerxes—the Caspians in their cloaks of skin with their bows of cane; the Ethiopians in their skins of leopards with spears of antelope horns; the Libyans in their dress of leather with javelins made hard by fire; the Thracians with the heads of foxes upon their heads; the Moschians who wore helmets made of wood and the Cabalians who wore the skulls of men.

For him the Eleusinian and the Osirian mysteries were re-enacted,

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and he watched the women of Thrace tear to fragments Orpheus, the first great musician. At his will, he could see rise and fall the Empire of the Aztecs, the Empire of the Incas; or beloved Cæsar slain in Rome's Senate; or the archers at Agincourt; or the Americans in Belleau Wood. Whatever man had written—whether poets, historians, philosophers or scientists—his strangely shaped mechanisms could bring before him, changing the words into phantoms real as though living.

HE was the last and greatest of the poets—but also he was the last and greatest of the musicians. He could bring back the songs of ancient Egypt, or the chants of more ancient Ur. The songs that came from Moussorgsky's soul of Mother Earth, the harmonies of Beethoven's deaf brain or the chants and rhapsodies from the heart of Chopin. He could do more than restore the music of the past. He was master of sound.

To him, the music of the spheres was real. He could take the rays of the stars and planets and weave them into symphonies. Or convert the sun's rays into golden tones no earthy orchestra had ever expressed. And the silver music of the moon—the sweet music of the moon of spring, the full-throated music of the harvest moon, the brittle crystalline music of the winter moon with its arpeggios of meteors—he could weave into strains such as no human ear had ever heard.

So Narodny, the last and greatest of poets, the last and greatest of musicians, the last and greatest of artists—and in his inhuman way, the greatest of scientists—lived with the ten of his choosing in his caverns. And, with them, he consigned the surface of the earth and all who dwelt upon it to a negative Hell—

Unless something happening there might imperil his Paradise!

Aware of the possibility of that danger, among his mechanisms were those which brought to eyes and ears news of what was happening on earth's surface. Now and then, they amused themselves with these.

It so happened that on that night when the Ruler of Robots had experimented with a new variety of ray—a space warper—Narodny had been weaving the rays of Moon, Jupiter and Saturn into Beethoven's Moonlight Symphony. The moon was a four day crescent. Jupiter was at one cusp, and Saturn hung like a pendant below the bow. Shortly Orion would stride across the Heavens and bright Regulus and red Aldebaran, the Eye of the Bull, would furnish him with other chords of starlight remoulded into sound.

Suddenly the woven rhythms were ripped—hideously. A devastating indescribable dissonance invaded the cavern. Beneath it, the nymphs who had been dancing languorously to the strains quivered like mist wraiths in a sudden blast and were gone; the little moons flared, then ceased to glow. The tonal instruments were dead. And Narodny was felled as though by a blow.

After a time the little moons began to glow again, but dimly; and from the tonal mechanisms came broken, crippled music. Narodny stirred and sat up, his lean, high-cheeked face more Satanic than ever. Every nerve was numb; then as they revived, agony crept along then. He sat, fighting the agony, until he could summon help. He was answered by one of the Chinese.

Narodny said: "It was a spatial disturbance, Lao. And it was like nothing I have ever known. The Ruler of Robots is perfecting a ray with which to annihilate mankind."

Narodny smiled: "I care nothing for mankind—yet I would not harm them, willingly. And it has occurred to me that I owe them, after all, a great debt. Except for them—I would not be. Also, it occurs to me that the robots have never produced a poet, a musician, an artist—" He laughed: "But it is in my mind that they are capable of one great art at least! We shall see."

DOWN in the chamber of screens, Narodny laughed again.

He said: "Lao, is it that we have ad-

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vanced so in these few years? Or that man has retrogressed? No, it is the curse of mechanization that destroys imagination. For look you, how easy is the problem of the robots. They began as man-made machines. Mathematical, soulless, insensible to any emotion. So was primal matter of which all on earth are made, rock and water, tree and grass, metal, animal, fish, worm, and men. But somewhere, somehow, something was added to this primal matter, combined with it—used it. It was what we call life. And life is consciousness. And therefore largely emotion. Life establishes its rhythm—and its rhythm being different in rock and crystal, metal, fish, and man—we have these varying things.

"Well, it seems that life has begun to establish its rhythm in the robots. Consciousness has touched them. The proof? They have established the idea of common identity—group consciousness. That in itself involves emotion. But they have gone further. They have attained the instinct of self-preservation. They are afraid mankind will revolt against them. And that, my wise friend, connates fear—fear of extinction. And fear connates anger, hatred, arrogance—and many other things. The robots, in short, have become emotional to a degree. And therefore vulnerable to whatever may amplify and control their emotions. They are no longer mechanisms.

"So, Lao, I have in mind an experiment that will provide me study and amusement through many years. Originally, the robots are the children of mathematics. I ask—to what is mathematics most closely related? I answer—to rhythm—to sound—to sounds which raise to the nth degree the rhythms to which they will respond. Both mathematically and emotionally."

Lao said: "The sonic sequences?"

Narodny answered: "Exactly. But we must have a few robots with which to experiment. To do that means to dissolve the upper gate. But that is nothing. Tell Maringy and Euphroysne to do it. Net a ship and bring it here. Bring it down gently. You will have to kill the men in it, of course, but do it mercifully. Then let them bring me the robots. Use the green flame on one or two—the rest will follow, I'll warrant you."

The hill behind where the old house had stood trembled. A circle of pale green light gleamed on its breast. It dimmed and where it had been was the black mouth of a tunnel. An airship, half rocket, half winged, making its way to New York, abruptly drooped, circled, fell gently, like a moth, close to the yawning mouth of the tunnel.

Its door opened, and out came two men, pilots, cursing. There was a little sigh from the tunnel's mouth and a silvery misty cloud sped from it, over the pilots and straight through the opened door. The pilots crumpled to the ground. In the airship half a dozen other men, slaves of the robots, slumped to the floor, smiled, and died.

There were a full score robots in the ship. They stood, looking at the dead men and at each other. Out of the tunnel came two figures swathed in metallic glimmering robes. They entered the ship. One said: "Robots, assemble."

The metal men stood, motionless. Then one sent out a shrill call. From all parts of the ship the metal men moved. They gathered behind the one who had sent the call. They stood behind him, waiting.

In the hand of one of those who had come from the tunnel was what might have been an antique flash-light. From it sped a thin green flame. It struck the foremost robot on the head, sliced down from the head to the base of the trunk. Another flash, and the green flame cut him from side to side. He fell, sliced by that flame into four parts. The four parts lay, inert as their metal, upon the floor of the compartment.

ONE of the shrouded figures said: "Do you want further demonstration—or will you follow us?"

The robots put heads together; whispered. Then one said: "We will follow."

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They marched into the tunnel, the robots making no resistence nor effort to escape. They came to a place whose floor sank with them until it had reached the caverns. The machine-men still went docilely. Was it because of curiosity mixed with disdain for these men whose bodies could be broken so easily by one blow of the metal appendages that served them for arms? Perhaps.

They came to the cavern where Narodny and the others awaited them. Marinoff led them in and halted them. These were the robots used in the flying ships—their heads cylindrical, four arm appendages, legs triple-jointed, torsos slender. The robots, it should be understood, were differentiated in shape according to their occupations. Narodny said: "Welcome, robots! Who is your leader?"

One answered: "We have no leaders. We act as one."

Narodny laughed: "Yet by speaking for them you have shown yourself the leader. Step closer. Do not fear—yet."

The robot said: "We feel no fear. Why should we? Even if you should destroy us who are here, you cannot destroy the billions of us outside. Nor can you breed fast enough, become men soon enough, to cope with us who enter into life strong and complete from the beginning."

He flecked an appendage toward Narodny and there was contempt in the gesture. But before he could draw it back a bracelet of green flame circled it at the shoulder. It had darted like a thrown loop from something in Narodny's hand. The robot's arm dropped clanging to the floor, cleanly severed. The robot stared at it unbelievingly, threw forward his other three arms to pick it up. Again the green flame encircled also his legs above the second joints. The robot crumpled and pitched forward, crying in high-pitched shrill tones to the others.

Swiftly the green flame played among them. Legless, armless, some decapitated, all the robots fell except two.

"Two will be enough," said Narodny. "But they will not need arms—only feet."

The flashing green bracelets encircled the appendages and excised them. The pair were marched away. The bodies of the others were taken apart, studied, and under Narodny's direction curious experiments were made. Music filled the cavern, strange chords, unfamiliar progressions shattering arpeggios and immense vibrations of sound that could be felt but not heard by the human ear.

And finally this last deep vibration burst into hearing as a vast drone, hummed up and up into swift tingling tempest of crystalline, brittle notes, and still ascending passed into shrill high pipings, and continued again unheard, as had the prelude to the droning. And thence it rushed back, the piping and the crystalline storm reversed, into the drone and the silence—then back and up.

And the bodies of the broken robots began to quiver, to tremble, as though every atom within them were dancing in ever increasing, rhythmic motion. Up rushed the music and down—again and again. It ended abruptly in midflight with one crashing note.

The broken bodies ceased their quivering. Tiny star-shaped cracks appeared in their metal. Once more the note sounded and the cracks wideened. The metal splintered.

NARODNY said: "Well, there is the frequency for the rhythm of our robots. The destructive unison. I hope for the sake of the world outside it is not also the rhythm of many of their buildings and bridges. But, after all, in any war there must be casualties on both sides."

Lao said: "Earth will be an extraordinary spectacle—a plaintive phenomenon, for a few days."

Narodny said: "It is going to be an extraordinary uncomfortable Earth for a few days, and without doubt many will die and more go mad. But is there any other way?"

There was no answer. He said: "Bring in the two robots."

They brought them in.

Narodny said: "Robots—were there

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ever any of you who could poetize?"

They answered: "What is poetize?"

Narodny laughed: "Never mind. Have you ever sung—made music—painted? Have you ever dreamed?"

One robot said with cold irony: "Dreamed? No—for we do not sleep. We leave all that to men. It is why we have conquered them."

Narodny said, almost gently: "Not yet, robot. Have you ever—danced? No? It is an art you are about to learn."

The unheard note began, droned up and through the tempest and away and back again. And up and down—and up and down, though not so loudly as before. And suddenly the feet of the robots began to move, to shuffle. Their leg-joints bent; their bodies swayed. The note seemed to move now here and now there about the chamber, and always following it, grotesquely. Like huge metal marionettes, they followed it. The music ended in the crashing note. And it was as though every vibrating atom of the robot bodies had met with some irresistible obstruction. Their bodies quivered and from their voice mechanisms came a shriek that was hideous blend of machine and life. Once more the drone, and once more and once more and then, again, the abrupt stop.

There was a brittle crackling all over the conical heads, all over the bodies. The star-shaped splinterings appeared. Once again the drone—but the two robots stood, unresponding. For through the complicated mechanisms which under their carapaces animated them were similar splinterings.

The robots were dead!

Narodny said: "By tomorrow we can amplify the sonor to make it effective in a 3000 mile circle. We will use the upper cavern, of course. it means we must take the ship out again. In three days, Marinoff, you should be able to cover the other continents. See to it that the ship is completely proof against the vibrations. To work. We must act quickly—before the robots can discover how to neutralize them."

IT was exactly at noon the next day that over all North America a deep inexplicable droning was heard. It seemed to come not only from deep within earth, but from every side. It mounted rapidly through a tempest of tingling crystalline notes into a shrill piping and was gone. Then back it rushed from piping to drone; then up and out and down. Again and again. And over all North America the hordes of robots stopped in whatever they were doing. Stopped—and then began to dance—to the throbbing notes of that weirdly fascinating music—that hypnotic rhythm which seemed to flow from the bowels of the earth.

They danced in the airships and scores of those ships crashed before the human crew could gain control. They danced by the thousands in the streets of the cities—in grotesque rigadoons, in bizarre sarabands; with shuffle and hop and jig the robots danced while the people fled in panic and hundreds of them were crushed and died in those panics. In the great factories, and in the tunnels of the lower cities, and in the mines—everywhere the sound was heard—and it was heard everywhere—the robots danced . . . to the piping of Narodny, the last great poet . . . the last great musician.

And then came the crashing note—and over all the country the dance halted. And began again . . . and ceased . . . and began again. . . .

Until at last the streets, the lower tunnels of the lower levels, the mines, the factories, the homes, were littered with metal bodies shot through and through with star-shaped splinterings.

In the cities the people cowered, not knowing what blow was to fall upon them . . . or milled about in fear-maddened crowds, and many more died. . . .

Then suddenly the dreadful droning, the shattering tempest, the intolerable high piping ended. And everywhere the people fell, sleeping among the dead robots, as though they had been strung to the point of breaking, sapped of strength and then abruptly relaxed.

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And as though it had vanished from Earth, America was deaf to cables, to all communication beyond the gigantic circle of sound.

But that midnight over all Europe the drone sounded and Europe's robots began their dance of death . . . and when it had ended a strange and silent rocket ship that had hovered high above the stratosphere sped almost with the speed of light and hovered over Asia—and next day Africa heard the drone while the black answered it with his tom-toms — then South America heard it and last of all far off Australia . . . and everywhere terror trapped the peoples and panic and madness took their grim toll.

Until of all that animate metal horde that had fettered Earth and humanity there were a few scant hundreds left—escaped from the death dance through some variant in their constitution. And, awakening from that swift sleep, all over Earth those who had feared and hated the robots and their slavery rose against those who had fostered the metal domination, and blasted the robot factories to dust.

AGAIN the hill above the caverns opened, the strange torpedo ship blinked into sight like a ghost, as silently as a ghost floated into the hill and the rocks closed behind it.

Narodny and the others stood before the gigantic television screen, shifting upon it images of city after city, country after country, over all Earth's surface. Lao, the Chinese, said: "Many men died, but many are left. And the Ruler of Robots is no more. They may not understand—but to them it was worth it."

Narodny mused: "It drives home the lesson—what man does not pay for, he values little."

And Narodny shook his head, doubtfully. But soon harmonies were swelling through the great cavern of the orchards, and nymphs and fauns dancing under the fragrant blossoming trees—and the world again forgotten by Narodny.

THE LAST STORY EVER WRITTEN

By STANLEY G. WEINBAUM

THE BRINK OF INFINITY

A STORY OF DOOM'S EQUATION

In the Next Issue of THRILLING WONDER STORIES

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LIQUID LIFE

All over the car the huge Amœbæ were crawling.

A Complete Novelette

CHAPTER I

The Filterable Virus

MILLIONAIRE METCALF drew his Inverness cape more tightly about his tall spare frame, and shivered slightly, although it was a warm June day.

"That's Salt Pond, Dee!" he announced, with a wave of his hand.

His companion, a broad-shouldered blond young man, stared with interest at the little body of water, flanked by pine-clad slopes.

Its dark and turbid surface seemed to absorb, rather than cast back, the reflection of the fleecy clouds floating lazily overhead. The water heaved and rolled slightly, though there was no perceptible breeze. Dee remembered having once seen just this sort of sluggish undulant motion in a maggoty cistern full of liquid swill. He, too, shivered.

A grim smile spread across the lean

Bio-Chemical Science Discovers an Amazing

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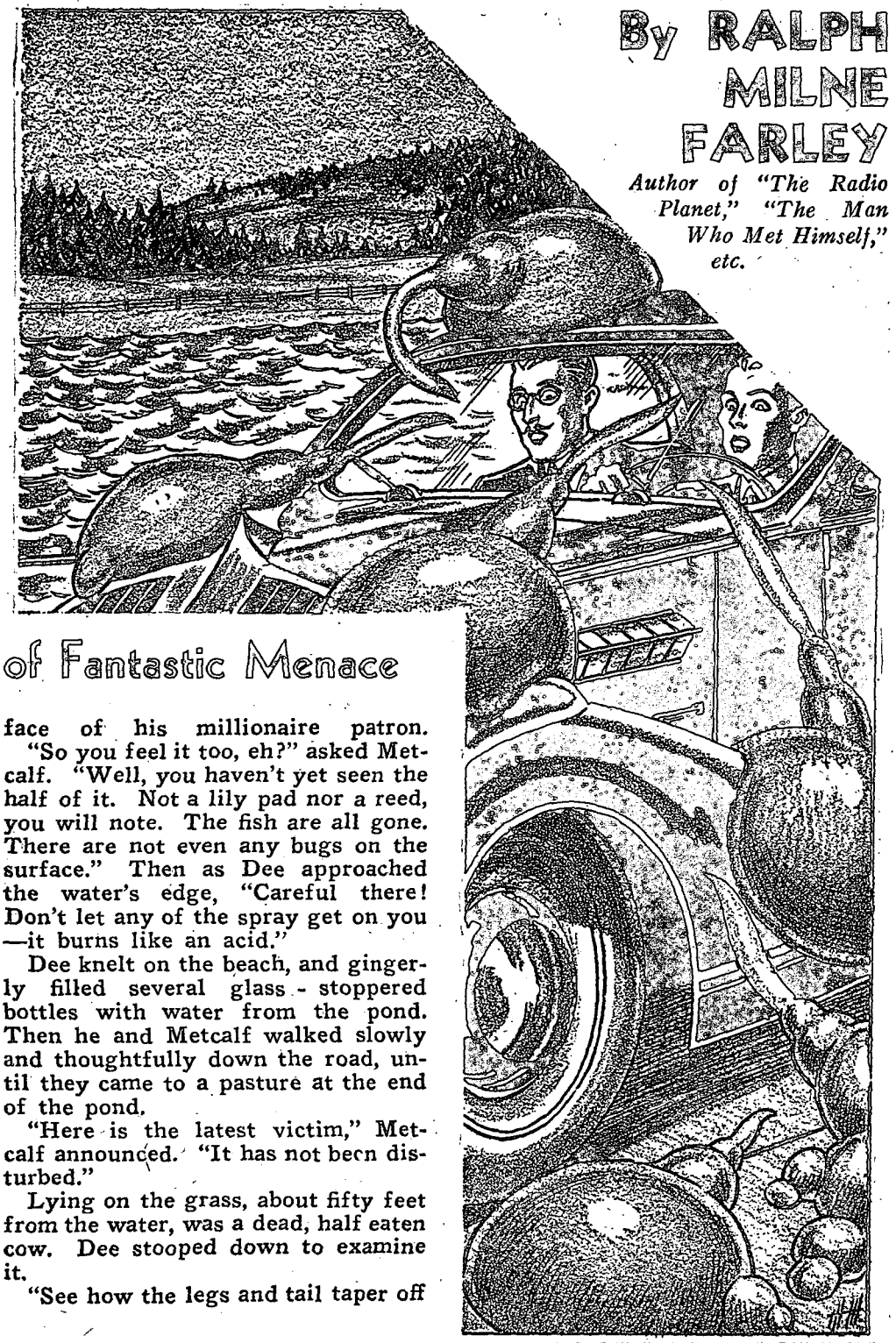
By RALPH MILNE FARLEY

Author of "The Radio Planet," "The Man Who Met Himself," etc.



of Fantastic Menace

face of his millionaire patron.

"So you feel it too, eh?" asked Metcalf. "Well, you haven't yet seen the half of it. Not a lily pad nor a reed, you will note. The fish are all gone. There are not even any bugs on the surface." Then as Dee approached the water's edge, "Careful there! Don't let any of the spray get on you—it burns like an acid."

Dee knelt on the beach, and gingerly filled several glass-stoppered bottles with water from the pond. Then he and Metcalf walked slowly and thoughtfully down the road, until they came to a pasture at the end of the pond.

"Here is the latest victim," Metcalf announced. "It has not been disturbed."

Lying on the grass, about fifty feet from the water, was a dead, half eaten cow. Dee stooped down to examine it.

"See how the legs and tail taper off

Alien Being that Thinks, Talks—and Destroys!

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to a point at their upper ends, as though they had been dipped in acid," he said. "I pulled a half dead frog out of a snake's mouth once, and the whole rear end of the poor frog had been dissolved to a point, just like that. You don't suppose—"

"No," Metcalf replied. "There is nothing in that pond large enough to eat a cow. I have had it dredged with dragnets from end to end. The nets were eaten away, and several of the men got badly burned by drops of water, but not a thing did they bring to the surface."

"Well," Dee said, "I've seen enough to start on. Let's get me back to Boston, so that I can analyze these samples."

DEE entered the laboratory of John Dee Service, Inc., and placed his glass-stoppered bottles on the long central table, strewn with chemical paraphernalia.

Along the right hand wall ran a table containing a radio-set, and some partially dissected cats. A white-coated young man, dark and with a pointed black mustache, laid down the scalpel with which he had been working on one of the cats, and strolled over to the central table.

Along the left hand wall ran a table, littered like the central one with beakers, test-tubes, and such. Here a stocky, bearded young man in a grey smock was working. He too got up and joined the group about the new arrival.

"Well, fellows," Dee announced, "old man Metcalf has given us a chance to repay him for the money he advanced to us."

"I hope," the tall cat-dissecter stated seriously, "that the assignment is something which will be of some real use to the world."

"Bah!" spat the stocky bullet-headed one. "You two fellows make me tired. All that Jack thinks about is playing square with an old friend. All that Ivan thinks about is the welfare of the so-called human race. Me, I'm practical. I hope that this job will get the load of debt off our heads. Go on and tell us about it, Jack."

Dee rapidly sketched the lethal effect of the waters of Salt Pond, and the strange fate of the partially devoured cows. "It looks to me altogether too pat," he insisted. "The acid effect of the water, for the chemist Jack Dee to investigate; its lethal effect, for the bio-chemist Hans Schmidt; and the cow-eating entity, for the biologist Ivan Zenoff. Just a kindly invention of Metcalf's, so as to free us of our debt, without insulting us by merely cancelling it."

"Salt Pond?" asked Zenoff interestedly. "Is it really salt, Jack? Way up in the White Mountains?"

"Yes, Ivan," Dee replied. "Almost like sea water. Metcalf transplanted a lot of flounders, eels, crabs, and mussels there, about ten years ago; and they all did very nicely until this year."

"Salt water, eh?" Zenoff said thoughtfully. "The elixir of life. Life originated in the sea, and when it had evolved enough so that it could crawl out onto dry land, it carried the sea with it in its blood-stream. Every living cell of our bodies is lapped by the waves of the sea, or it could not survive."

"But from what you say, Jack," Schmidt interposed, "I don't believe that you will find that it analyzes like ordinary sea water now. Your description of the remains of the dead cows sounds to me as though they had been dissolved in some very powerful, burning acid."

"We'll soon see." Dee pulled a laboratory smock over his head. "Ivan, you get back to your cats' brains; and Hans, you get back to your filterable virus. Let me tackle this. This seems to be a question in *in*organic chemistry."

He sat down at his work bench, poured some of one of his samples of pond water into a test-tube, and set to work. His two partners returned to their own benches. For about an hour there was silence in the laboratory.

Then suddenly Dee cried out in pain. "Burned myself!" he shouted, and looked frantically around for an antidote.

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HANS SCHMIDT rushed over and poured something from a small brown bottle onto Dee's hand.

"Dilute carbolic," he announced, in response to a questioning look.

"What! An acid to counteract an acid? How absurd!" Dee declared.

"Well, it worked!"

"But what on earth made you think of using carbolic, Hans?"

"I merely acted instinctively," Schmidt rather sheepishly replied. "When anything goes wrong, a bacteriologist instinctively reaches for his carbolic acid. That's all."

Ivan Zenoff joined them.

"Let me see the hand. Um! Pretty badly burned. I'll dress it for you." He returned to his own bench, got some gauze bandage and salve, and neatly wrapped up the injured member.

"How far had you got, Jack?" Schmidt inquired.

"Nowhere," Dee admitted. "It is nothing but sea water, with—well—perhaps a slight excess of organic residue. But no acid; nothing to account for its burning effect."

"How does it react to litmus?"

"Why, I never tried. Took it for granted that it was acid." He dipped a small piece of lavender paper in the sample. If anything, it turned even bluer. "Hm! Certainly not acid. Perhaps it's some caustic alkali, and that's why the carbolic acid neutralized it."

"Too quick-acting for a caustic alkali, if you'd ask me," Schmidt commented. "Give me a sample with which to experiment. I have an idea."

For several days Dee and Schmidt worked on their analyses, while Zenoff busied himself with his cats.

Finally Dee admitted himself licked.

"It's nothing but sea water," he maintained.

"So?" asked Schmidt, his pale blue eyes twinkling. "Chemically, perhaps yes. But *bio*-chemically, no."

"What do you mean?"

"I mean that Salt Pond is infected with some new sort of very deadly filterable virus."

"And just what is a filterable virus?"

"Up until recently it was supposed that a filterable virus was merely a culture of germs so minute that even the finest porcelain filter could not remove them from the liquid. But early in nineteen-thirty-six it was discovered that the reason why these germs wouldn't filter out was that there were no germs there. The liquid itself was alive—a sort of living colloidal crystalline solution."

"Living?" exclaimed Zenoff, looking up from his dissection. "How can a liquid live?"

"What *is* life?" Schmidt countered. "Life is the ability to grow, to assimilate food, and to reproduce. Filterable viruses do all of that. A filterable virus is a living liquid."

"And you think that Salt Pond is infected with such a virus?" Dee asked.

"Yes. In fact, I've been able to grow some of the Salt Pond virus in a culture. That would account for the fact that a germicide saved your hand the other day."

"Say, look here," interposed Zenoff, getting up from his dissected cats, and joining them. "Here's a chance to try my experiment on a new form of life."

"You mean your proof that anesthesia does not dull the brain?" asked Dee.

"Exactly! By sinking two electrical contacts in the auditory center of the brain of an anesthetised cat, and by amplifying their impulse by means of radio tubes, I have reproduced in the loud speaker whatever sounds enter the cat's ear. Unconsciousness doesn't affect the brain at all—it merely disconnects the mind. The cat's physical body keeps right on thinking, but she doesn't know it!"

"Well?" Dee encouraged.

"Well, it occurred to me that perhaps the living tissues of the brain merely served as a sort of aerial to pick up the sounds; and so I tried every other sort of living tissue I could obtain. But no go. My apparatus can pick up a sound only from the auditory center of a living brain.

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Now I shall make one final try with the—"

A crash on the table beside them caused the three young men to look hastily around. One of Ivan Zenoff's cats, not yet operated upon, had jumped onto the bench, had knocked over one of the bottles of Salt Pond water, and was now busily engaged in lapping it up, evidently relishing its saline taste.

"Why, the poor beast! She'll be horribly burned!" cried Dee. "Quick, Hans, the antiseptic!"

BUT too late! For with a shriek of pain the cat began turning somersaults on the bench.

To save his apparatus from destruction, Dee cuffed the cat into the sink, where it twitched convulsively for a moment, and then lay still.

"Quick-working poison!" Zenoff dryly observed, twirling his mustaches. "Now, as I was saying when I was interrupted, I'm going to take my apparatus, and see if a filterable virus can pick up sounds. If not, and as I have already tried about everything else, then we are pretty safe in assuming that my phenomenon is one of brain activity."

"Look!" exclaimed Dee, pointing to the dead cat lying in the sink. For the cat's belly had opened up, and a slimy colorless liquid was oozing out.

Hastily he placed a glass stopper in the drain hole of the sink. Then, as the three men stood and watched, the cat slowly dissolved, until presently the sink was filled with nothing but a sluggish opalescent liquid, the surface of which throbbed and heaved.

"Liquid life!" Dee exclaimed. "This explains the dead cows."

"But," Schmidt objected, "the cow's head and legs and tail remained!"

"And so would the cat's have done," said Zenoff, "if the liquid had run down the drain. When it oozed out of the cow's belly, it undoubtedly sank into the ground, before it had time to dissolve any more than the upper ends of the legs and tail."

"Let's dish this out," Dee suggested.

Schmidt brought over a two gallon cylindrical glass jar and very carefully bailed up all the liquid with a granite-ware dipper.

"Now for my experiment," Zenoff announced, carrying the jar, with its slimy heaving contents, over to his own bench, and setting it down beside his radio. Switching on the current, he picked up a slender black rubber rod with two sharp metal points at its end connected to the radio-set by two wires, and carefully dipped the contacts into the liquid.

"Hello there!" he shouted. But no sound came out of the loud speaker.

"Well," said Hans Schmidt, shrugging his shoulders, "I guess this is the last proof necessary—"

"Hello there!" boomed the loud speaker.

Zenoff jumped, and nearly dropped his contact points into the seething liquid.

"Well," remarked the loud speaker, with exactly Schmidt's accent, "I guess this is the last proof necessary."

"Delayed rebroadcasting!" Zenoff exclaimed, his dark eyes flashing. "Say! This *is* something! A new phenomenon!"

"Let's dish this out," spoke the loud speaker, this time in Dee's tones.

Dee's jaw dropped.

"Why, it repeats things in a different order than we said them!" he exclaimed.

"Fellows," Zenoff solemnly announced, "this isn't mere repeating! It's something more!"

"Huh! Perhaps the cat's brain is still active," scornfully sniffed Hans Schmidt.

For about an hour the three friends sat around the dissolved dead cat, discussing what had happened, and advancing theory after theory, only to discard each one of them in turn.

Finally Zenoff reinserted his contacts in the jar, and announced, "Well, fellows, I believe that this liquid whether on account of the cat part of it, or to the filterable virus part of it, has some sort of low order intelligence. Now I'm going to holler something at it again."

"Fellows," interrupted the loud speaker, "it is *you* who have the low

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order of intelligence. You—not I."

"Now the thing is improvising!" Zenoff exclaimed jubilantly.

But, although he held the electrical contacts in place, and talked and shouted, and finally read aloud from a book for several hours, not another sound came out of the loud speaker.

CHAPTER II

The Overdosed Solution

THE next morning, however, when he repeated the experiment, he got an immediate response.

"Read to me some more," boomed the loud speaker. "Your thesis on the souls of cats was very interesting. Read me something about filterable viruses."

"Hey, Hans, do you hear that?" Zenoff shouted across the laboratory. "Bring us your thesis. This tub of suds wants to hear your thesis now."

"Don't call *me* a tub of suds!" sternly admonished the loud speaker.

Schmidt and Dee both hastened over to Zenoff's bench.

"Well, of all the cockeyed performances!" Dee exclaimed. "Here are we, three supposedly sane individuals, carrying on a serious conversation with a radio set hooked up to a dead cat dissolved in some extremely caustic salt water!"

"The cat has nothing whatever to do with the matter," the loud speaker interpolated. "I merely ate the cat. Do you imagine, Jack, that that apple which you were just eating when you entered the laboratory, is what is talking to me through you?"

"Now, I know that this is a frame-up," said Dee, and there was sadness in his tones. "Ivan, you're playing a trick on us."

"Indeed I'm not!" Zenoff indignantly exclaimed.

"Indeed he's not!" echoed the loud speaker.

"No," Zenoff continued seriously. "You can search the room for concealed wires, if you wish, but you will find nothing."

"Then we are all crazy!" cried Dee, sitting down heavily in a chair.

"No," said Zenoff. "We've stumbled onto something big! Those savants who evolved the theory that a filterable virus is liquid fire, merely discovered a new order of being. We have discovered a new type of mind!"

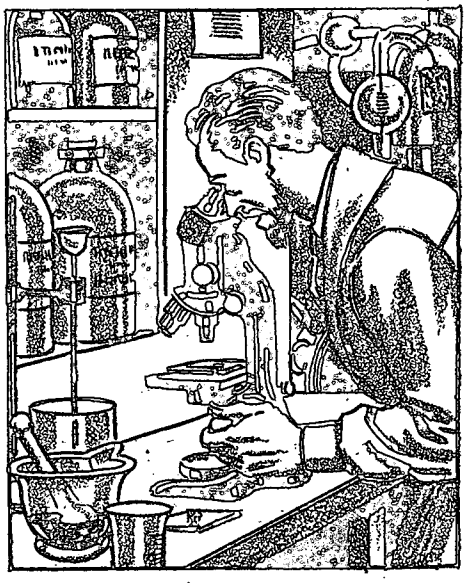
"Or perhaps a mere mechanical thinking machine," Schmidt suggested.

"You, and your mechanistic philosophy," sneered Zenoff.

"Read me that thesis about filterable viruses!" boomed the loud speaker imperatively.

"Yes, sir," Zenoff meekly replied, picking up the bound manuscript.

"That's better," said the loud speaker, in a satisfied tone.



The rest of the day was spent by the three partners taking turns reading to the jar of colorless liquid.

When at five o'clock Zenoff reached out to remove the electrical contacts, the loud speaker peremptorily commanded, "Stop! Don't cut me off! Keep on reading!"

"But we have to rest," Zenoff politely explained.

"'Rest'? What is 'rest'?" the thing asked, and was not satisfied until Zenoff produced and read to it the Encyclopedia Britannica article on "Sleep," and several of the cross-

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references. Then Zenoff was permitted to remove the contacts, and the three friends went home.

In the days that followed, they read aloud book after book, and thesis after thesis to the insatiable liquid in the glass jar. They even read it the daily papers, and were astounded at the intelligent interest which it soon developed about current events.

BUT daily the liquid became more and more irritable and rude in its attitude toward them; until finally Zenoff, exasperated, threatened to remove the contacts.

"Am I irritable?" asked the loud speaker conciliatingly. "I am sorry. Let me think a moment." A long pause; then, "I believe that my trouble is due to insufficient saline content. Please add a little more salt to me."

Schmidt brought the salt, and put in a pinch at a time, stirring the liquid with a glass rod, until the liquid announced, "Okey. I feel fine now. Go on with the reading."

Dee sighed. "I believe we've got ourselves an 'old man of the sea'," he said. Then, of course, had to explain that allusion to the liquid.

When he had finished the explanation, the liquid spoke. "Not at all. You know, I believe that by putting my superior mind to work on your problems, I can help you solve them. All that I ask in return is food, salt, and water."

"What are you, anyway?" Zenoff blurted out. The three had never put this question to the thing—had never even discussed it in its presence.

"I've been thinking about that myself," came haltingly from the loud speaker. "I am somewhat like the filterable viruses, of which you have read to me, and yet I am different. I am liquid life. I was once a part of the life of Salt Pond. How long that life persisted there, I cannot say; because back in those days we knew nothing of what you human beings call 'time.' I have enjoyed learning how the world seems to you. We, the virus of the pond, never knew anything except pure thought, until you brought me here."

"Hold on!" Dee interrupted. "You speak of 'I', 'we', 'the virus in the pond,' 'the rest of me'; it's quite confusing. Just what is your relationship to the virus that is left in the pond?"

"Your mere human mentality," the virus patronizingly replied, "is not able to grasp the significance of that relationship. I am a distinct individual.

"Yet, if you were to divide me into two jars, each would be I, and the other would be someone else. If you were to feed me, let me grow, subdivide me, until there were enough of us to overwhelm the earth, nevertheless we, they, I, whatever you choose to call it, would all still be me, capable of recombining and redividing indefinitely. The human language has no personal pronouns applicable to a filterable virus."

That night, on their way home from the laboratory, Zenoff remarked to the others, "You know, that crack of the virus' about overwhelming the earth, threw rather a chill into me. We must be careful not to feed him, it, them, too much."

The next morning, when Schmidt was salting the virus, his hand slipped and dumped in about half a cupful of salt. Instantly the liquid in the jar commenced to boil. Tongues of foam, like the tentacles of a small octopus, leaped from its surface, only to fall back again. And from the loud speaker there came a harsh croaking, "Gimme more salt! Hooray! Feed me! Feed me more dead cats! I want to grow—and divide—and grow and divide. Conquer the earth. Eat everything—everybody!"

Zenoff leaped to the radio set and snapped it off.

"My God!" he exclaimed. "The thing's drunk!"

Dee got up thoughtfully from his own bench, and squared his broad shoulders. "We've a problem on our hands," he asserted. "It'll be weeks and weeks before the effects of that salt wears off."

"And," Schmidt added, "if we try to precipitate it out with silver nitrate, so as to get a silver chloride precipi-

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tate, the residual sodium nitrate, being mildly germicidal, may kill the poor thing."

"All that I can suggest is to dilute it," said Dee. He did some figuring on a piece of paper. "About ten gallons of water should do the trick."

THEY dumped the drunken liquid into a large tub, and added water until its pulsating boiling subsided.

"And now what?" asked Zenoff. "We have too much of it now."

"Pour most of it down the sink," Schmidt suggested. "The small remaining part would still have the mentality of the whole, according to its own theories of individuality."

"And," Dee grimly added, "the large quantity that went down the drain would eventually reach the ocean, and would feed and multiply there until it destroyed all marine life, and made the sea as burningly dangerous as Salt Pond now is. No!"

"My God!" Zenoff exclaimed. "That is what would happen, too, if Salt Pond ever got loose!"

"We've got to kill all but the small part which we save," Schmidt asserted callously.

"It would be like killing an old friend," Dee objected.

"But any part is equal to the whole," said Zenoff. "Come on!"

They dished back into the glass jar just the quantity which they had had before the unfortunate overdose of salt; and poured carbolic acid into what was left in the tub.

Then they inserted the electrodes in the jar, and listened.

"Food! Give me food!" came a faint voice from the loud speaker.

"He's still alive!" Dee joyously exclaimed.

"And sober," Zenoff added, tossing in a piece of dead cat.

The voice came louder now.

"Thank you, my friends. There seems to be a gap in my memory. Tell me what happened."

They told him. They explained the analogy of human drunkenness. But they omitted all mention of the killing of the virus which had remained in the big tub.

"What became of the rest of me, of my brothers or my children? Oh, your language is so inexpressive!" the virus complained.

"We—poured it down the sink," Dee lied.

The liquid in the jar foamed fiercely for a moment. "You had no right to do that!" stormed its voice out of the radio set. "I—it—the rest of me—is dead now. Too much dilution with fresh water will kill us. I am dead now."

The three men exchanged significant glances, but said nothing.

Finally the virus calmed down.

"You individuals cannot appreciate my loss. Although there is as much of me as there was originally, yet most of me is now dead and gone. It's too late to remedy that now, but don't let it happen again!"

Millionaire Metcalf's increasing insistency on a report on the mystery of Salt Pond presented a problem. The three young scientists did not dare tell their patron that a virus was responsible for the trouble, for he would have insisted on killing it off; and that would have infuriated the portion of the virus in the jar in their laboratory. To explain to Mr. Metcalf that their pet virus was an intelligent talking being would either secure them commitment to Danvers, if not believed; or, if believed, would start a veritable gold rush to get samples of the pond water. Jars of talking water would become a nationwide fad and a corresponding menace.

Doubtless the virus itself would have been able to solve this problem, if they had dared to present the problem to it; but, remembering its fury at their killing the tubful of it, they didn't dare mention the possibility of their having to destroy the entire pond.

So they stalled their patron for several months, putting off the day of eventual showdown.

Meanwhile their business as consulting chemists prospered immensely. For, with the aid of the supermind of the virus in the glass jar, they were able to solve nearly every problem brought to them. Their reputation

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grew prodigiously. Business and money came pouring in. They had to enlarge their establishment and hire scores of assistants, specialists in every field.

This success so pleased their patron Metcalf, that he indulgently overlooked their delay in solving his own problem. Finally they told him that they were on the verge of proving that the waters of the pond were immensely valuable.

They housed their virus in a special sound proof room, to which no one but the three heads of the firm were ever admitted. They hired a number of readers to read aloud in an adjoining room, continuously day and night, except when one of the three of them was in consultation with their mastermind ally. The voice of the reader was conveyed by microphone and loud speaker into the sound proof holy of holies.

CHAPTER III

The Virus Turns Alchemist

BUT finally the virus began a period of sulking. Schmidt carefully tested its salt content, but found it to be okay. The trouble appeared to be mental, rather than physical. The virus was becoming fed up on its existence.

"What am I getting out of all this?" it complained. "You three fellows are becoming immensely rich on my brains. But money does me no good. All that I get out of life is a glass jar, plenty of dead fish to eat, and a lot of fool questions from members of an inferior race."

"Our wealth enables us to arrange for you to be read to, continuously," Dee remonstrated.

"Pure thought is palling on me," whined the virus. "I want to do something. Take me back to my pond again. Let me merge with the rest of me. Let me teach them what I have learned. Then you can bring a part of it back here, and teach me some more."

"I might just as well tell you, Virus," said Dee levelly, "that that is out of the question. You, so long as you are just you, are a benefactor of the human race; but, if the whole pond knew as much as you do about us, you would quantitatively become a menace. Stay with us, and be content to realize how much ahead of the rest of your brethren you are!"

"You don't understand," sulked the virus. "They—it—the rest of the pond—is me! I am one virus, one and inseparable, and I want the rest of me to know everything that I myself know. Oh, damn the inexpressibility of your language! I want the whole of me to have the joy of knowledge that this small part of me has."

"Knowledge doesn't seem to be making this small part of you very happy," Dee grimly commented.

He and his two associates remained obdurate; and the virus, after sulking for a day or two, finally appeared to become reconciled to their decision.

And then one day, when Dee and Schmidt and Zenoff entered the virus' room for a consultation, the glass jar was empty!

The respective reactions of the three associates were typical.

"What will become of the John Dee Service, Inc., now that our 'silent partner' is gone?" Schmidt exclaimed. "Will we three fellows be able to carry on, trading upon our acquired reputation?"

"My God, man!" Zenoff scornfully exclaimed. "Don't think of us at a time like this! What will become of the world, if that thing gets loose and multiplies?"

"I'm thinking of the poor virus," Dee sadly interpolated. "It can't possibly live out of its jar. It has probably been sopped up by the carpet. It's dead. Our friend and partner is dead."

He cast his glance around the floor, looking for a wet spot, hoping to find enough dampness to dilute and feed and restore to life again. "Look!" he exclaimed, pointing toward a far corner, where squatted a hemispherical blob, like a jellyfish.

As they stared, the blob extended a long gelatinous arm toward them, and

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then flowed into it like an amœba, until the nigh extremity of the arm swelled up to become the entire animal. The operation was repeated. Again and again.

Dee snatched the empty glass jar from the table, and laid it on the padded floor, with its open mouth toward the crawling creature, which promptly increased its rate of progress, and crawled right in. Dee tipped up the jar, and replaced it on the table. Hurriedly he hung the electrical contacts into the jar.

"My friends," spoke the loud speaker, in an excited tone, "I have demonstrated the power of mind over matter. I have taught myself extensibility. I can walk! Mentally superior, even to the human race, but physically lower even than an amœba, I have now advanced my body one step up the scale of evolution!"

THE three men flashed each other a glance. They were all thinking the same thing: let the virus' new accomplishment keep the virus happy, like a child with a new toy; but meanwhile strengthen the defenses, lest it escape.

"We'll put in a tile floor, if you wish, Virus," Dee suggested. "It might be more comfortable than a carpet for you to crawl over."

"That would be an excellent idea," judiciously stated the voice out of the loud speaker. The virus seemed more affable than it had been for weeks. "And now that you fellows are so concerned about my comfort, I have a suggestion for your welfare. Why don't you make money, instead of earning it?"

"Just what is the difference?" asked Zenoff.

"Manufacture it, I mean," the virus explained.

"Could we—" Schmidt eagerly began; but Dee cut in, "Counterfeiting is out!"

"Oh, I didn't mean counterfeiting," came laughing tones of the virus, "I meant alchemy."

"Alchemy?" in chorus.

"Yes. Alchemy. Making gold out of baser metals."

"Do you know how?" Schmidt eagerly exclaimed.

"N-no," the virus admitted. "Not yet. But why not? From what has been read to me here, I judge that transmutation is always automatically taking place among metals of the radium-uranium group; and that other elements have been transmuted in infinitesimal quantities by bombardment by neutrons, and beta rays, and such. I am sure that my mind can solve the problem, if you will read me everything that is known and has been written on the subject."

"Can you?" asked Schmidt, his pale blue eyes eagerly wide.

"I wonder what would be the effect on the world," mused Zenoff, twirling his moustache ruminatively.

"Would it be legal?" asked Dee, his handsome face a puzzled frown.

"Why not?" snapped Schmidt, strangely tense, in contrast with his usual stolidity. "Is it any worse to make gold out of lead, than to make lead pipe out of lead?"

"I suppose not," Dee replied dubiously.

"I still doubt its social effect," Zenoff said.

"Well, I don't; and what's more, I don't care," Schmidt retorted. "Jack, you'd sacrifice our welfare for some imaginary ethics. And, Ivan, you'd sacrifice us for the welfare of your precious human race. Well, I'd not. Virus, I'm with you! What do you want?"

"Start your readers on atomic theory," the voice from the loud speaker replied. "Meanwhile run over to the public library and get out all that you can find about the ancient alchemists. Who knows but that those dreamers, in spite of their crudity and lack of modern knowledge, may have come closer to the truth than we realize."

SO the new line of reading began. Finally the virus made his announcement to three haggard young men. "I have solved the problem. It is really very simple," the loud speaker went on. "Its simplicity is probably what has caused it to be overlooked by

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human so-called brains. It involves merely certain common chemicals, and certain well known bits of electrical apparatus. Jot down this bill of goods, and bring them here." He dictated the list to the three eager young men, as with shaking fingers they jotted it down. Then they hastened from the room to collect the desired things.

BUT of hearing of the virus, Zenoff whispered to Dee, "Watch out for a doublecross, Jack."

"I don't believe it!" Dee stoutly replied. "We've always played square with the virus, and I believe that he'll play square with us."

"I'd be in favor of tipping him into the sink and pouring phenol over him, as soon as he tells us," Schmidt suggested. "We can't afford to let the world in on our secret."

"We can afford it better than the world can," mused Zenoff.

"And there'll be no doublecrossing either, Hans!" asserted Dee, with pained surprise.

"Oh, you two quixotic idealists!" railed Schmidt. "You both make me sick!"

They carried a work table into the holy of holies, and then piled it with the chemicals, and the coils, rheostats, and other apparatus which the virus had specified.

"Everything is here," they eagerly announced. "Now what?"

In keen and incisive tones, the virus replied: "And now to state my price!"

"Your price?" snarled Schmidt. "What do you mean?"

"Certainly!" said the virus. "You didn't think, did you, that I was going to make you masters of the world, and not exact something in return. As soon as you had the secret, I would be of no further use to you; and then no more dead fish and salt and readers for me. My price is that you take me back to the pond."

"Is that all?" sighed Schmidt in a relieved tone. "It's little enough to pay for unlimited gold."

"It is too much!" cried Zenoff, his dark eyes snapping. "Not for all the gold there is, would I menace the world with what that pond could do, if our virus were to return to it and merge his knowledge with its brains."

"Damn you, Ivan!" shouted Schmidt, his rotund face purpling. "Would you stand in the way—"

"Shut up, both of you!" bellowed Dee, thrusting his athletic figure between his two associates. "Now calm down, and listen to reason. We're all tired and irritable. I don't believe that we'll have to choose. We've worked happily together with the virus, like brothers. He's one of us. He has shared our ambitions, and our success. All that we've got to do is to give him our word of honor that we'll always take care of him. He knows that he can trust us."

"I could trust you, Jack Dee," came the voice from the loud speaker. "But the other two I do not trust. You, Hans Schmidt, care only for yourself. And you, Ivan Zenoff, are a visionary fanatic. I have spoken."

"Well, of all the ungrateful—" Schmidt choked.

Zenoff's dark eyes narrowed, and his pointed mustache twitched.

"But Virus," pleaded Dee, "you are being unfair to two splendid fellows. If you can trust me, why not—"

"Sanctimonious tripe!" Schmidt interjected. "Let me handle this. Let's see what threats will do! Virus, even with your super-mind and your newly learned 'extensibility,' you are physically in our power. A few drops of phenol in your jar, and where would you be? Come across with the secret of how to make gold, or I'll put an end to you. If we can't know the secret, no one else ever shall!"

"I'm not afraid!" calmly replied the voice from the radio set. "You cannot kill me. For I am only a part of me. The rest of me—the pond—would still live. I am deathless."

"I'd pour carbolic in the pond—tons of it!" Schmidt blustered.

"That might be the best way out of this mess," Zenoff muttered, half to himself.

"Look here, fellows," Dee once more interceded, "we're not getting anywhere. Let's go to sleep. Perhaps in the morning, after we have rested, we can reach some agreement."

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"An excellent idea," boomed the loud speaker. "But remember that my minimum terms for eternal wealth are that I be allowed to merge with my brethren of the pond."

TIRED out from his long vigil, Dee overslept, and so it was nearly noon when he reached the Laboratories. The various chemists and physicists and biologists and mathematicians were at their benches or desks, busily at work on their respective problems. The reader's voice was droning away on some abstruse treatise.

Dee unlocked the door of the secret chamber. Then he paused aghast on the threshold. The virus, and all the electrical and chemical apparatus for the transmutation of gold, were gone! The glass jar was empty! The table was bare! Even the radio set was no longer in its place!

Extensibility might account for the absence of the virus, but the absence of the paraphernalia and the radio set could be explained by nothing but human agency. And no one but he and Schmidt and Zenoff had keys to the secret room. Dee stood like a man in a trance.

Zenoff ambled in. "What's up?" he asked, hiding a yawn with one slender hand.

"Well, if you didn't do it," Dee grimly announced, "Hans Schmidt has stolen the virus."

"And the gold-making apparatus!" Zenoff added, peering into the room. "He's undoubtedly headed for Salt Pond, New Hampshire, to turn the virus loose, in return for the secret. And when our virus teaches 'extensibility' to all the other little viruses, goodby world!"

"We must stop Hans, before he reaches the pond!" Dee told Zenoff. "Let's go after him."

"We can't take any chances," Zenoff commented. "Let's get my car, and try and beat Schmidt there."

So a few minutes later, two resolute young men, armed with forty-five caliber automatics, were speeding northward out of Boston, in a trim high-powered coupé.

CHAPTER IV

Dee's Promise

IT was night when they reached the vicinity of Salt Pond. Parking their car around a turn of the road, they crept forward in the darkness. Across the pond, on the farther shore, there glowed the light of a lantern, by the rays of which the two watchers could see the bulky form of their associate, with a glass jar, and a radio set, and a complicated hook-up of electrical coils and other gadgets.

"We're in time!" breathed Zenoff. "Hans must have waited until darkness."

"He doesn't trust the virus, and the virus doesn't trust him," Dee whispered. "He wouldn't take the virus to the pond, until he had tested out the secret; and the virus wouldn't tell him the secret, until they reached the pond."

Just then there came a triumphant shout from across the pond. "Gold! It's really gold! And how—"

By the light of Schmidt's lantern, they saw him reach inside his coat, and produce a small bottle.

Then from the glass jar on the ground beside him, there reared up an octopuslike arm, glittering wet in the lantern light. It wrapped its tip around Schmidt's wrist with a jerk which spun the bottle from his hand. Then Schmidt himself crashed to the ground with a shriek of terror.

"Come on!" cried Zenoff. "The thing has got him!" And he and Dee charged around the end of the pond as fast as they could run.

The lantern upset and went out. From the darkness came Schmidt's wail, "Virus, I didn't mean it! I swear I didn't. Let me go, and I'll play fair. Help! Help!" Then a bubbling gurgle, followed by splashing, and then silence.

When the two friends reached the scene, there was not even a trace of Schmidt. They found and relit the lantern, but still no sign of Schmidt. The glass jar was there, empty. There was a mess of hopelessly twisted wires

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and coils and switches, strewn helter-skelter by the struggle between Schmidt and the amœboid virus. And lying a little distance away on the beach was a brown bottle of about pint size. Dee walked over, picked it up.

"It doublecrossed our buddy," said Zenoff. "Tricked him into bringing it here to its pond, and then killed him and dragged him in."

Dee stooped and picked up a length of lead pipe.

"It played square, to the extent of teaching Hans the secret of alchemy," he asserted. "Look at this piece of pipe. Turned all yellow through half of its length. And, as to who doublecrossed whom, look at this bottle. Carbolic acid! Hans planned to kill the virus, so that it could never tell the secret to any other man. You'll have to admit that he got what was coming to him."

"I'll admit no such thing!" stormed Zenoff. "Schmidt's plan to kill the virus was an excellent idea. It is a menace to the world. Let's go and tell Metcalf, and arrange to dump in a truckload of carbolic, and kill the entire lake."

"I loved Hans as much as you did, Ivan," said Dee brokenly. "But he certainly asked for it, and I haven't the heart to blame the virus. After all, the virus isn't human."

"I'll say he's not! Feasting on the body of a fellow who's been his friend and partner for months! To kill Hans in imagined self-defense may have been excusable, but cannibalism is not!"

"That's so. He did actually eat Hans. I can hardly believe it. No, I refuse to believe it. His only thought was to kill Hans in self-defense. And so, if Hans has really been dissolved it is the fault of the others, of the rest of the pond, whom our virus had not had time—"

"Bosh!" exclaimed Zenoff. "Didn't our virus himself tell us that he and the pond are one? The moment he slipped into the water, his every thought became transfused to the farthest shore. Let's get away from here before our little pet puts us on the spot too."

THE next day was overcast and grey. A stiff cold wind was blowing. On their way to Anson Metcalf's they had to pass Salt Pond again. A dash of spray splashed against their car.

Dee, who was driving, slammed on the brakes and backed up. "I'm not going to take a chance on any of that caustic acid!" he grimly explained.

"Look at that!" cried Zenoff in horror, pointing ahead.

The waves of the little lake were breaking against the shore, and were sailing wind-driven out onto the road; but, instead of merely wetting the smooth concrete surface, they fell in huge blobs, which rolled toward each other and coalesced like drops on a window pane, until they became hemispheres the size of inverted bushel baskets. And, when they had attained this size, they put forth tentacles, and began crawling off of the road, away from the pond.

"Extensibility!" exclaimed Dee in an awed tone. "Our virus has taught extensibility to his brothers of the pond!"

"His brothers?" Zenoff snorted. "Every one of those super-amœbæ is our own little virus himself, with his super-brain stocked with all the accumulated knowledge of the human race."

A long slimy semi-transparent arm reached across the windshield. "We're surrounded!" shouted Dee. All over the car the huge amœbæ were crawling. Dee snapped on the windshield-wiper, sweeping aside the groping arm. Turning the car around, he started headlong back for town. One by one, the creatures dropped away.

It took some time for two very excited and incoherent young scientists to get their story across on Anson Metcalf. When the purport and truth of their story finally dawned upon him, his lean figure tensed. "Why, this is terrible!" he exclaimed. "Do you realize what damage they can do?"

"Do we realize?" Zenoff snorted. "You haven't talked to that thing for weeks like we have! Its brain power is uncanny, unlimited. And now there

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are thousands of it. And more of them are being created every minute, as long as this wind keeps up."

"But what are we going to do?" Metcalf cried.

"Is there anyone at the State Capitol who knows that you aren't crazy, sir?" Dee asked; then added embarrassedly, "I mean, who'd take your say-so for immediate action, without waiting several weeks for an investigation."

"Yes. Adjutant General Pearson. An old war buddy of mine."

"Fine! Just the man! Phone him at once. Get him to send you all the National Guard troops in this section of the State, as fast as he can muster them in. And have them come armed with tree sprays. Then get every chemical supply house in Boston and even New York to ship you all their carbolic acid—all of it."

LATE that afternoon, the troops began to arrive. By dark the countryside had been cleared of all visible crawlers.

Then ensued days of searching for skulking survivors. The handful of remaining amœbæ had learned caution. They became as tricky and elusive as foxes. Their whereabouts could be known only by their depredations: a dead half eaten animal, a swath of grass or shrubbery dissolved.

And then it suddenly became evident which way they were headed. Each outbreak of their destructive tendencies was farther to the southeast, nearer to the sea!

"If even one of them reaches the ocean, the world is doomed," Zenoff asserted. "We must call for more troops and establish a cordon."

"But how about the rivers?" asked General Pearson.

"Fortunately they will avoid the dilution of fresh water," Dee explained. "It would be fatal to them."

So a line of soldiery was stretched from river to river, between which the amœbæ were seeking the sea.

But it did no good. One or two of the enemy would somehow sneak through, and eat, and multiply. And then the line of troops would have to fall back and reform. The authorities became desperate.

Finally there occurred to Jack Dee an idea—an idea so bizarre that he did not tell his associates anything more than that he had in mind an experiment which he wished to perform at the source of all the trouble, Salt Pond. Something in the nature of an anti-toxin to the virus, he explained. It sounded plausible, so they let him.

But what he really did was to dip into the lake two electrical contacts hitched to a radio set.

Before he even said a word, there came from the loud speaker, "Jack Dee, old friend, I am glad—"

"You've got a nerve calling me 'old friend'!" he interrupted, bitterly.

"I don't blame you for saying that," the virus in the pond replied. "My children have caused much destruction, but they have been heavily slaughtered in return. The rest of me, lying peacefully here and thinking, while all this has been going on, have reached the conclusion that pure thought is after all the key to happiness. I want to call off this march to the sea. I want to be friends with the human race. Will you make a deal with me, Jack Dee?"

"What deal?"

"If I will teach you how to capture all of my wayward children, will you bring them all back and let them merge in me again, and then will you arrange a trust fund to feed me and care for me and read to me forever, here in this quiet pond? I will repay by solving all human problems which are brought to me."

"I agree," Dee eagerly replied. "I promise, on my word of honor."

"I trust you," said the virus. "Now you must hurry, before any of my children reaches the sea. My plan is very simple. Stretch a row of heaps of salt across ahead of the advancing pieces of virus. Tempted, they will eat the salt and lose consciousness, as I did that time back in your laboratory. Then, while they are drunk, scoop them up in pails, and bring them here to me, who am their father and their self. And, when the menace is at an end, remember your promise."

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"I will. And I thank you," Dee shouted.

HE rushed back to headquarters, and the line of salt was laid. Blob after blob of drunken virus was scooped up, and carted back, and dumped into the pond; until at last several weeks went by without the sign of a single bit of destruction, and so the menace was believed to be at an end.

Anson Metcalf and General Pearson and Jack Dee remained true to their promise to the pond, much to the disgust of Ivan Zenoff.

"The world will never be safe," he insisted, "until the virus is destroyed. It has no soul, no morals. It ate our buddy, a man who had been its friend. I tell you, we must destroy it!"

"But, Ivan, I gave it my word of honor!" Dee remonstrated.

"Word of honor? Bah! One's word of honor to a soulless animal—not even an animal, lower than a microbe even—a mere colloidal crystalline solution—surely a word of honor to such isn't binding. If you won't destroy the virus, I'm going to the governor over your heads."

To the governor they all went. Metcalf and Dee and General Pearson pled and argued for a square deal.

But the governor was of Zenoff's view. The virus was, after all, merely a germ, and a very deadly one at that. The interests of the public came first, over any one man's promise to a pond. Promise to a pond indeed! Ha, ha!

General Pearson flatly refused to carry out the governor's orders, and was summarily removed.

Anson Metcalf hired the best firm of Concord lawyers, and got out an injunction to keep the State troops off his property. But the governor promptly declared martial law, and thus superseded the courts. A big oil truck, filled with carbolic acid, set out for Salt Pond under a strong military escort.

Jack Dee was beaten, humiliated, broken-hearted. The State had refused to back up his promise. There was but one way in which he could square himself—to offer up his own life in atonement.

So he hastened to the pond. Inserting the two electrical contacts into the water, he told of his failure.

"I cannot take your life," the virus replied, "for my own course is run. I doubt even my power to dissolve you now, if I wished. I have learned, from what your readers have read to me, that all viruses flare up from some unknown source, cause an epidemic, and then become rapidly weaker and weaker, until they disappear. Even I, the virus with the superhuman mind, am not immune to this cycle. Look around you. The reeds are beginning to grow again. A few hardy insects are already daring to skim across my surface."

The voice died to an inaudible whisper, then suddenly blared forth again with one final burst of vitality, "I harbor this last spite for that fanatic, Ivan Zenoff. Tell him that he came too late; that I was already dead when his lethal fluid reached me. And as for you, dear friend, you kept the faith. I shall cherish the memory of that fact, as I slip into the long night from which there is no awakening."

The voice trailed off into silence. A scudding swallow dipped into the surface of the pond for a floating insect, and came away dripping but unscathed. Dee solemnly removed the two electrical contacts from the water.

There were tears in his eyes, but the smile of victory was on his lips, as the tank truck with its military escort rumbled around the curve of the road.

For he had kept his word of honor, even to a filterable virus.

REBELS IN SPACE!

MUTINY ON EUROPA—a Novelette of the Prison Asteroid by EDMOND HAMILTON —in the Next Issue!

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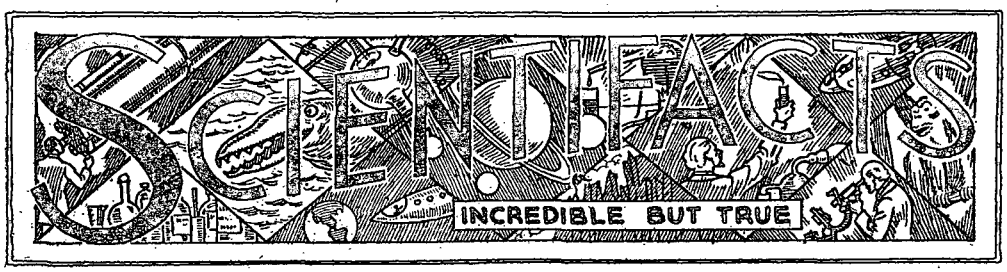
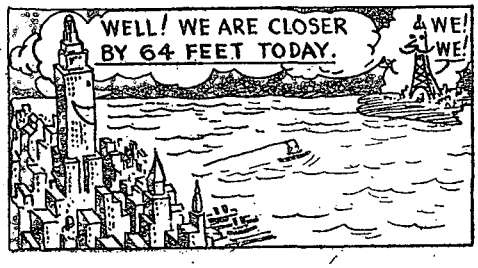


A BRAND-NEW, FASCINATING FEATURE

By J. B. WALTER

CONTINENTS MOVE CLOSER AND FARTHER APART!

NEW YORK CITY is closer to Paris by sixty-four feet some days. The ebb and rise of tides, which are caused by the force emanating from the moon and sun, is not confined to the sea. The land, too, ebbs and rises, recedes and advances. The great continents move closer together



and farther apart. The tides of the land are as regular as the tides of the sea.

The American continent moves as much as thirty-four feet. The movement of Europe is just as great. When they are pulled farthest in opposite directions they are sixty-four feet farther away than when they are at their closest. This is far more than a theory. The actual movements have been measured and checked by means of accurate radio time signals, which have been corrected to make full allowance for the interference of all other phenomena.

COSMIC AND X-RAYS

COSMIC rays are nine thousand times more powerful than x-rays. A tenth of an inch of lead sheathing will absorb all the x-rays produced by a standard x-ray machine. Gamma rays, generated by thorium, uranium and radium penetrate just six inches of solid lead and are stopped by a little more than five feet of water. There is still much mystery about cosmic rays, but their penetrating power has been approximately measured and it is known to be great enough to penetrate to the bottom of a lake more than seven hundred and fifty-five feet deep.

AN HOUR MAY BE CENTURIES LONG

THE theory of relativity states that there is no absolute length, but that length varies with motion. An interval of time is the interval between two events. A train moves (first event) from one point to another (second event), in a given time, and we say it moves twenty or a hundred miles an hour, according to the *distance* between the events. Assume that it leaves the terminal in Chicago and arrives in the New York terminal, one thousand miles away, ten hours later.

We conclude it has moved one hundred miles an hour. Our statement is correct provided the earth continues to move through space at its usual and constant speed. But suppose the speed of the earth through space increases until it approaches the speed of light. Then, according to the Lorentz contraction theory, Chicago will move very much closer to New York, for length decreases as motion increases.

The thousand miles between Chicago and New York will contract until the two cities become practically one. Union Station will be but a few yards from Grand Central. The train still takes ten hours to go from one

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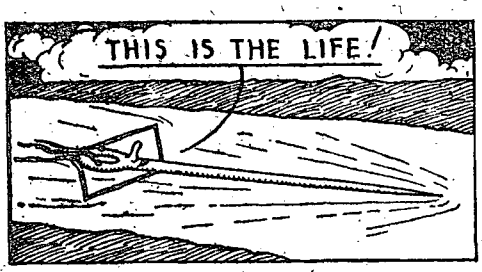
to the other. Instead of moving at the rate of one hundred miles an hour, its speed is but a few feet per hour. Since distance depends upon motion, time must depend upon motion. Einstein summarizes the argument by the statement: "As a consequence of its motion the clock goes more slowly than when at rest."

A STEEL NEEDLE WILL FLOAT ON WATER

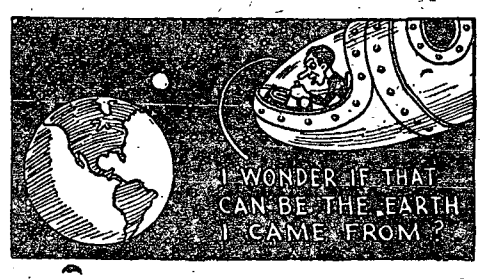
THOUGH a needle has a high specific gravity and offers little surface, nevertheless it will float without any treatment on the surface of any still water. Great care is required to place the needle gently so that it does not break the surface of



the water. For this is not ordinary floating. What holds up the needle is surface tension. The surface tension forms a skin on the water which is strong enough to support considerable weight, but if the surface is disturbed and the skin broken the needle will instantly plunge to the bottom.

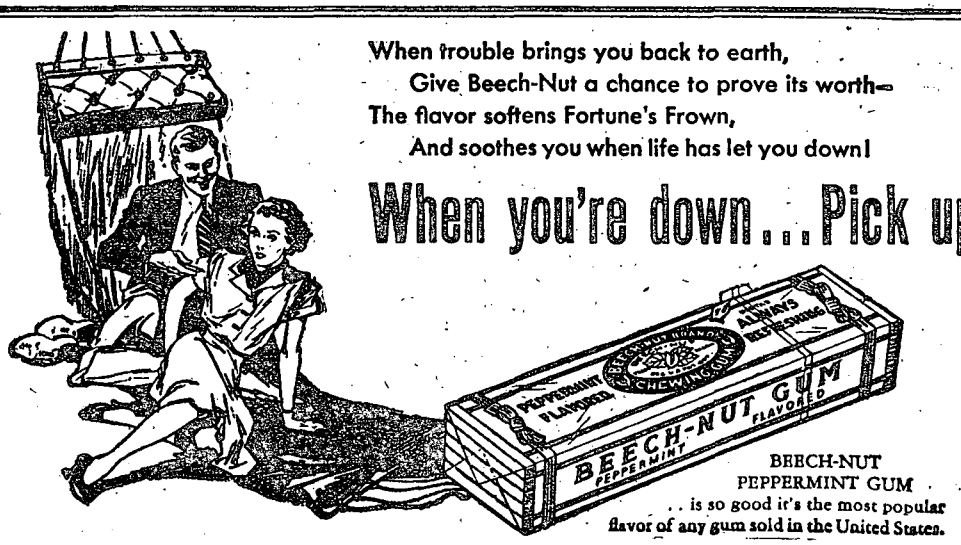
A HALF HOUR VOYAGE THROUGH SPACE MAY TAKE EONS

IF we embark on a space ship which moves at a rate approaching the speed of light, what appears to be but a brief interval to us who are pas-



sengers may cover ages of time as measured upon the earth. Adopting the theories of Einstein we know that the time interval slows as we increase our speed. As we approach the speed of light, time becomes negligible.

Thus, as our space ship hurls through space, our ship clock moves, so far as we can tell, with all the acceleration to which we have become accustomed. Our hearts beat at the same measured intervals as on earth. As we sit in our ship we will be unaware either from our own aging or the motion of the clock that more


When trouble brings you back to earth,
Give Beech-Nut a chance to prove its worth—
The flavor softens Fortune's Frown,
And soothes you when life has let you down!
When you're down...Pick up
BEECH-NUT GUM
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than half an hour has passed, but each second of the clock, each heart beat, may measure off an era on the slower moving earth.

When, at the end of half an hour, we have circled the universe and returned to our starting point, we will find that even the continent from which we embarked is a thing of such a remote past that it is as legendary as the lost Atlantis.

A NATION MAY LIVE ON SAWDUST

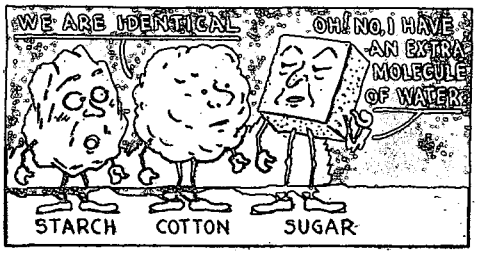
IF ever a blockade against a nation, as might have been the case with Italy recently, became truly effective, the food shortage may be partly circumvented by making sugar from sawdust, or indeed, from any waste wood available. During the World War, Germany made sugar from such materials and used the product for the production of alcohol and yeast. By the addition of nitrogen and phosphate some of this sugar was converted into albumin for cattle food.

POISONOUS BEES

A BEE sting is as poisonous as rattlesnake venom. The vicious fangs of a rattler inject a virus that is no more powerful, weight for weight, than the sting of a bee. In fact, it has been demonstrated that the venom of a rattlesnake given in equal doses has the same effect in exactly the same degree, as the same amount of poison from a nettle, a scorpion or a bee. The poison injected by the bite of a cobra is entirely different.

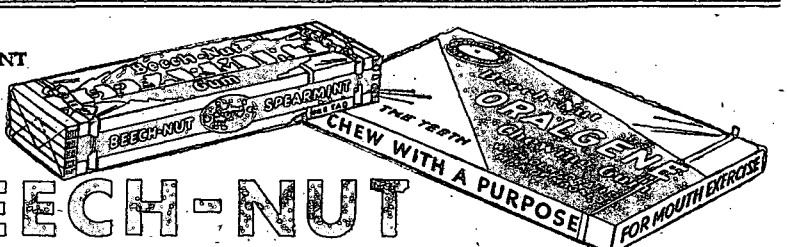
THAT EXTRA MOLECULE

SUGAR, cotton and starch are identical except for an extra molecule of water in the sugar. Though no child of ten would have any difficulty in distinguishing between a pile of sugar, a lump of starch and a puff of cotton, the most careful analysis of these products by chemists has failed to show the slightest difference in their chemical composition, except for the extra water in the sugar. All three contain only carbon, hydrogen and oxygen in exactly the same proportions. In each there are six parts



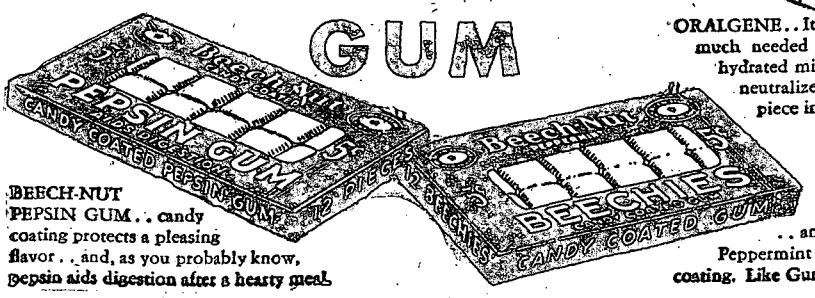
of carbon, ten parts of hydrogen, and five parts of oxygen. In adition, there is found one part of water in the sugar, that is, two parts of hydrogen and one of oxygen.

BEECH-NUT SPEARMINT ..especially for those who like a distinctive flavor. A *Beech-Nut Quality product.*



with BEECH-NUT GUM

ORALGENE.. Its firmer texture gives much needed exercise and its dehydrated milk of magnesia helps neutralize mouth acidity. Each piece individually wrapped.



BEECH-NUT PEPSIN GUM.. candy coating protects a pleasing flavor.. and, as you probably know, pepsin aids digestion after a hearty meal.

BEECHIES .. another really fine Peppermint Gum sealed in candy coating. Like Gum and Candy in one.

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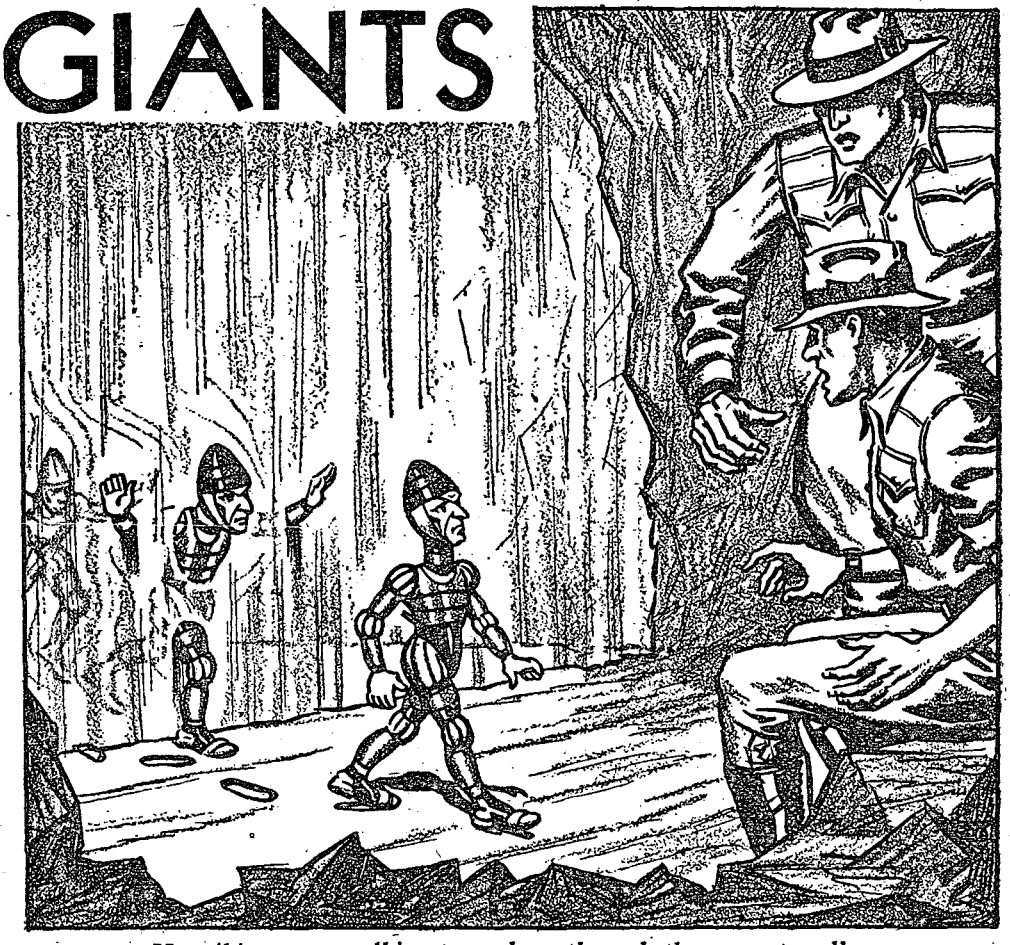
The MICROSCOPIC GIANTS



Mannikins were walking toward us through the cement wall

Men Go Forty Thousand Feet Below the Surface to Find Copper—and Battle with the Scurrying, Lilliputian Denizens of a Strange Land of Atomic Compression!

By PAUL ERNST

Author of "Devil at the Wheel," "Blood of Witches," etc.

IT happened toward the end of the Great War of 1941, which was an indirect cause. You'll find mention of it in the official records filed at Washington. Curious reading, some of those records! Among them are accounts of incidents so bizarre—freak accidents and odd discoveries fringing war activities—that the filing clerks must have raised their eyebrows skeptically before they buried them in steel cabinets, to remain unread for the rest of time.

But this particular one will never be

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buried in oblivion for me. Because I was on the spot when it happened, and I was the one who sent in the report.

Copper!

A war-worn world was famished for it. The thunder of guns, from the Arctic to the Antarctic and from the Pacific to the Atlantic and back again, drummed for it. Equipment behind the lines demanded it. Statesmen lied for it and national bankers ran up bills that would never be paid to get it.

Copper, copper, copper!

Every obscure mine in the world was worked to capacity. Men risked their lives to salvage fragments from battlefields a thousand miles long. And still not enough copper was available for the maws of the electric furnaces.

Up in the Lake Superior region we had gone down thirty-one thousand feet for it. Then, in answer to the enormous prices being paid for copper, we sank a shaft to forty thousand five hundred feet, where we struck a vein of almost pure ore. And it was shortly after this that my assistant, a young mining engineer named Belmont, came into my office, his eyes afire with the light of discovery.

"WE'VE uncovered the greatest archæological find since the days of the Rosetta Stone!" he announced bluntly. "Down in the new low level. I want to phone the Smithsonian Institute at once. There may be a war on, but the professors will forget all about war when they see this!"

"Wait a minute," I said. Belmont was apt to be over-enthusiastic. Under thirty, a tall, good-looking chap with light blue eyes looking lighter than they really were in a tanned, lean face, he sometimes overshot his mark by leaping before he looked. "What have you found? Prehistoric bones? Some new kind of fossil monster?"

"Not bones," said Belmont, fidgeting toward the control board that dialed our private number to Washington on the radio telephone. "Footprints. Fossil footsteps."

"You mean men's footprints?" I demanded, frowning. The rock formation at the forty-thousand-foot level was age-old. The pleistocene era had not occurred when those rocks were formed. "Impossible."

"But I tell you they're down there! Footprints preserved in the solid rock. Men's footprints! They antedate anything ever thought of in the age of Man."

Belmont drew a deep breath.

"And more than that," he almost whispered. "They are prints of shod men, Frank! The men who made those prints, millions of years ago, wore shoes. We've stumbled on traces of a civilization that existed long, long before man was supposed to have evolved on this earth at all!"

His whisper reverberated like a shout, such was its great import. But I still couldn't believe it. Prints of men—at the forty-thousand-foot level—and prints of shod feet at that!

"If they're prints of feet with shoes on them," I said, "they might be simply prints of our own workmen's boots. If the Smithsonian men got up here and found *that* a laugh would go up that would ruin us forever."

"No, no," said Belmont. "That's impossible. You see, these prints are those of *little* men. I hadn't told you before, had I? I guess I'm pretty excited. The men who made these prints were small—hardly more than two feet high, if the size of their feet can be taken as a true gauge. The prints are hardly more than three inches long."

"Where did you see them?" I asked.

"Near the concrete we poured to fill in the rift we uncovered at the far end of the level."

"Some of the workmen may have been playing a trick—"

"Your confounded skepticism!" Belmont ground out. "Tricks! Perhaps they're prints of our own men! Didn't I tell you the prints were preserved in *solid rock?* Do you think a workman would take the trouble to carve, most artistically, a dozen footprints three inches long in solid rock? Or that—if we had any men with feet that small—their feet would sink into the rock for a half inch or more? I tell you

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these are fossil prints, made millions of years ago when that rock was mud, and preserved when the rock hardened."

"And I tell you," I replied a little hotly, "that it's all impossible. Because I supervised the pouring of that concrete, and I would have noticed if there were prints before the rift."

"Suppose you come down and look," said Belmont. "After all, that's the one sure way of finding out if what I say is true."

I reached for my hat. Seeing for myself *was* the one way of finding out if Belmont had gone off half-cocked again.

It takes a long time to go down forty thousand feet. We hadn't attempted to speed up the drop too much; at such great depths there are abnormalities of pressure and temperature to which the human machine takes time to become accustomed.

By the time we'd reached the new low level I'd persuaded myself that Belmont must surely be mad. But having come this far I went through with it, of course.

Fossil prints of men who could not have been more than two feet high, shod in civilized fashion, preserved in rock at the forty-thousand-foot level! It was ridiculous.

WE got near the concrete fill at the end of the tunnel, and I pushed the problem of prints out of my mind for a moment while I examined its blank face. Rearing that slanting concrete wall had presented some peculiar problems.

As we had bored in, ever farther under the thick skin of Mother Earth, we had come to a rock formation that had no right to exist there at all. It was a layer of soft, mushy stuff, with gaping cracks in it, slanting down somewhere toward the bowels of the earth. Like a soft strip of marrow in hard bone, it lay between dense, compressed masses of solid rock. And we had put ten feet of concrete over its face to avoid cave-ins.

Concrete is funny stuff. It acts differently in different pressures and temperatures. The concrete we'd poured down here, where atmospheric pressure made a man gasp and the temperature was above a hundred and eighteen in spite of cooling systems, hadn't acted at all like any I'd ever seen before. It hadn't seemed to harden as well as it should, and it still rayed out perceptible, self-generated heat in the pressure surrounding it. But it seemed to be serving its purpose, all right, though it was as soft as cheese compared to the rock around it. . . .

"Here!" said Belmont, pointing down in the bright light of the raw electric bulbs stringing along the level. "Look!"

I looked—and got a shock that I can still feel.

A half inch or so deep in the rock floor of the level at the base of the concrete retaining wall, there *were* footprints. The oddest, tiniest things imaginable!

Belmont had said they were three inches long. If anything, he had overstated their size. I don't think some of them were more than two and a half inches long! And they were the prints of shod feet, undeniably. Perfect soles and heels, much like those of shoes we wear, were perceptible in the stone.

I stared at the prints with disbelief for a moment, even though my own eyes gave proof of their presence. And I felt an icy finger trace its way up my spine.

I had spent hours at this very spot while that concrete fill was made over the face of the down-slanting rift of mush rock. And I hadn't seen the little prints then. Yet here they were, a dozen of them made by feet of at least three varying sizes. How had I missed seeing them before?

"Prints made millions of years ago," Belmont whispered ecstatically. "Preserved when the mud hardened to rock—to be discovered here! Proof of a civilization on earth before man was thought to have been born. . . . For Heaven's sake! Look at that concrete!"

I stared along the line of his pointing finger, and saw another queer

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thing. Queer? It was impossible!

The concrete retaining wall seemed slightly milky, and not quite opaque! Like a great block of frosted glass, into which the eye could see for a few inches before vision was lost.

And then, again, the icy finger touched my spine. This time so plainly that I shuddered a little in spite of the heat.

For a moment I had thought to see movement in the concrete! A vague, luminous swirl that was gone before I had fairly seen it. Or *had* I seen it? Was imagination, plus the presence of these eerie footprints, working overtime?

"Transparent concrete," said Belmont. "There's one for the book. Silicon in greater than normal amounts in the sand we used? Some trick of pressure? But it doesn't matter. The prints are more important. Shall we phone the Institute, Frank?"

For a moment I didn't answer. I was observing one more odd thing.

The footprints went in only two directions. They led out from the concrete wall, and led back to it again. And I could still swear they hadn't been there up to three days before, when I had examined the concrete fill most recently.

But of course they must have been there—for a million years or more!

"Let's wait a while on it," I heard myself say. "The prints won't vanish. They're in solid rock."

"But why wait?"

I stared at Belmont, and I saw his eyes widen at something in my face.

"There's something more than peculiar about those prints!" I said. "Fossil footsteps of men two feet high are fantastic enough. But there's something more fantastic than that! See the way they point from the concrete, and then back to it again? As if whatever made them had come out of the concrete, had looked around for a few minutes, and then had gone back into the concrete again!"

It was Belmont's turn to look at me as if suspecting a lack of sanity. Then he laughed.

"The prints were here a long, long time before the concrete was ever poured, Frank. They just happen to be pointing in the directions they do. All right, we'll wait on the Smithsonian Institute notification." He stopped and exclaimed aloud, gaze on the rock floor.

"What's the matter?" I asked.

"An illustration of how you could have overlooked the prints when you were supervising the fill," he said, grinning. "When I was down here last, a few hours ago, I counted an even twelve prints. Now, over here where I'd have sworn there were no prints, I see four more, made by still another pair of feet back before the dawn of history. It's funny how unobservant the eye can be."

"Yes," I said slowly. "It's very—funny."

FOR the rest of the day the drive to get more ore out of the ground, ever more copper for the guns and war instruments, drove the thought of the prints to the back of my mind. But back there the thought persisted.

Tiny men, wearing civilized-looking boots, existing long, long ago! What could they have looked like? The prints, marvelously like those of our own shod feet, suggested that they must have been perfect little humans, like our midgets. What business could they have been about when they left those traces of their existence in mud marshes millions of years ago. . . .

Yes, of course, millions of years ago! Several times I had to rein in vague and impossible impressions with those words. But some deep instinct refused to be reined.

And then Carson, my foreman, came to me when the last of the men had emerged from the shafts.

Carson was old; all the young men save highly trained ones like Belmont and myself, who were more valuable in peace zones, were at the various war fronts. He was nearly seventy, and cool and level-headed. It was unusual to see a frown on his face such as was there when he walked up to me.

"Mr. Frayter," he said, "I'm afraid we'll have trouble with the men."

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"Higher wages?" I said. "If they had a spark of patriotism—"

"They're not kicking about wages," Carson said. "It's a lot different than that. Steve Boland, he started it."

He spat tobacco juice at a nail-head.

"Steve works on the new low level, you know. Near the concrete fill. And he's been passing crazy talk among the men. He says he can see into the concrete a little way—"

"That's right," I interrupted. "I was down there this afternoon, and for some curious reason the stuff is a little transparent. Doubtless we could investigate and find out what causes the phenomenon. But it isn't worth taking the time for."

"Maybe it would be worth it," replied Carson quietly. "If it would stop Steve's talk, it might save a shut-down."

"What is Steve saying?"

"He says he saw a man in the concrete, two hours ago. A little man."

I stared at Carson.

"I know he's crazy," the old man went on. "But he's got the rest to halfway believe it. He says he saw a man about a foot and a half high, looking at him out of the concrete. The man was dressed in strips of some shiny stuff that made him look like he had a metal shell on. He looked at Steve for maybe a minute, then turned and walked away. He walked back through the concrete, like it was nothing but thick air. Steve followed him for a foot or so and then was unable to see him any more."

I smiled at Carson while sweat suddenly formed under my arms and trickled down my sides.

"Send Steve to me," I said. "I'll let him tell me the story too. Meanwhile, kill the story among the men."

Carson sighed.

"It's going to be pretty hard to kill, Mr. Frayter. You see, there's footprints down there. Little footprints that might be made by what Steve claimed he saw."

"You think a man eighteen inches high could sink into solid rock for half an inch—" I began. Then I stopped. But it was already too late.

"Oh, you've seen them too!" said Carson, with the glint of something besides worry in his eyes.

I told him of how and when the prints had been made.

"I'll send Steve to you," was all he said, avoiding my eyes.

STEVE BLAND was a hulking, powerful man of fifty. He was not one of my best men, but as far as I knew he had no record of being either unduly superstitious or a liar.

He repeated to me the story Carson had quoted him as telling. I tried to kill the fear I saw peering out of his eyes.

"You saw those prints, made long ago, and then you imagined you saw what had made them," I argued. "Use your head, man. Do you think anything could live and move around in concrete?"

"I don't think nothing about nothing, Mr. Frayter," he said doggedly. "I saw what I saw. A little man, dressed in some shiny stuff, in the concrete. And those footprints weren't made a long time ago. They were made in the last few days!"

I couldn't do anything with him. He was terrified, under his laborious show of self control.

"I'm leaving, Mr. Frayter. Unless you let me work in an upper level. I won't go down there any more."

After he had left my office shack, I sent for Belmont.

"This may get serious," I told him, after revealing what I'd heard. "We've got to stop this story right now."

He laughed. "Of all the crazy stuff! But you're right. We ought to stop it. What would be the best way?"

"We'll pull the night shift out of there," I said, "and we'll spend the night watching the concrete. Tell all the men in advance. Then when we come up in the morning, we can see if they'll accept our word of honor that nothing happened."

Belmont grinned and nodded.

"Take a gun," I added, staring at a spot over his head.

"What on earth for?"

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"Why not?" I evaded. "They don't weigh much. We might as well carry one apiece in our belts."

His laugh stung me as he went to give orders to the crew usually working at night in the forty-thousand-foot level.

We started on the long trip down, alone.

THERE is no day or night underground. Yet somehow, as Belmont and I crouched in the low level we could know that it was not day. We could sense that deep night held the world outside; midnight darkness in which nothing was abroad save the faint wind rattling the leaves of the trees.

We sat on the rock fragments, with our backs against the wall, staring at the concrete fill till our eyes ached in the raw electric light. We felt like fools, and said so to each other. And yet—

"Steve *has* some circumstantial evidence to make his insane yarn sound credible," I said. "The way we overlooked those footprints in the rock till recently makes it look as if they'd been freshly formed. You observed a few more this afternoon than you'd noticed before. And this ridiculous concrete *is* a shade transparent, as though some action—or movement—within it had changed its character slightly."

Belmont grimaced toward the concrete.

"If I'd known the report about the footprints was going to turn us all into crazy men," he grunted, "I'd have kept my mouth shut—"

His voice cracked off abruptly. I saw the grin freeze on his lips; saw him swallow convulsively.

"Look!" he whispered, pointing toward the center of the eight-by-thirty-foot wall.

I stared, but could see nothing unusual about the wall. That is, nothing but the fact we'd observed before: you could look into the thing for a few inches before vision was lost.

"What is it?" I snapped, stirred by the expression of his face.

He sighed, and shook his head.

"Nothing, I guess. I thought for a minute I saw something in the wall. A sort of moving bright spot. But I guess it's only another example of the kind of imagination that got Steve Boland—"

Again he stopped abruptly. And this time he got unsteadily to his feet.

"No, it's *not imagination!* Look, Frank! If you can't see it, then I'm going crazy!"

I stared again. And this time I could swear I saw something, too.

Deep in the ten-foot-thick retaining wall, a dim, luminous spot seemed to be growing. As though some phosphorescent growth were slowly mushrooming in there.

"You see it too?" he breathed.

"I see it too," I whispered.

"Thank God for that! Then I'm sane—or we're both mad. What's happening inside that stuff? It's getting brighter, and larger—" His fingers clamped over my arm. "Look! *Look!*"

But there was no need for him to tell me to look. I was staring already with starting eyes, while my heart began to hammer in my chest like a sledge.

As the faint, luminous spot in the concrete grew larger it also took recognizable form. And the form that appeared in the depths of the stuff was that of a human!

Human? Well, yes, if you can think of a thing no bigger than an eighteen-inch doll as being human.

A mannikin a foot and a half high, embedded in the concrete! But not e m b e d d e d — for it was moving! Toward us!

IN astounded silence, Belmont and I stared. It didn't occur to us then to be afraid. Nothing occurred to us save indescribable wonder at the impossible vision we saw.

I can close my eyes and see the thing now: a manlike little figure walking toward us through solid concrete. It bent forward as though shouldering a way against a sluggish tide, or a heavy wind; it moved as a deep-sea diver might move in clogging water. But that was all the resistance the concrete seemed to offer to it, that

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sluggish impediment to its forward movement.

Behind it there was a faint swirl of luminosity, like phosphorescent water moving in the trail of a tiny boat. And the luminosity surrounded the thing like an aura.

And now we could see its face; and I heard Belmont's whispered exclamation. For the face was as human as ours, with a straight nose, a firm, well-shaped mouth, and eyes glinting with intelligence.

With intelligence—and something else!

There was something deadly about those eyes peering at us through the misty concrete. Something that would have sent our hands leaping for our guns had not the thing been so little. You can't physically fear a doll only a foot and a half high.

"What on earth is it—and how can it move through solid concrete?" breathed Belmont.

I couldn't even guess the answer. But I had a theory that sprang full grown into my mind at the first sight of the little figure. It was all I had to offer in the way of explanation later, and I gave it to Belmont for what it was worth at the time.

"We must be looking at a hitherto unsuspected freak of evolution," I said, instinctively talking in a whisper. "It must be that millions of years ago the human race split. Some of it stayed on top of the ground; some of it went into deep caves for shelter. As thousands of years passed, the latter went ever deeper as new rifts leading downward were discovered. But far down in the earth is terrific pressure, and heat. Through the ages their bodies adapted themselves. They compacted—perhaps in their very atomic structure.

"Now the density of their substance, and its altered atomic character, allows them to move through stuff that is solid to us. Like the concrete and the mush rock behind it, which is softer than the terrifically compressed stone around it."

"But the thing has eyes," murmured Belmont. "Anything living for generations underground would be blind."

"Animals, yes. But this is human; at least it has human intelligence. It has undoubtedly carried light with it."

The little mannikin was within a few inches of the surface of the wall now. It stood there, staring out at us as intently as we stared in at it. And I could see that Steve Boland had added no imaginative detail in his description of what he had seen.

The tiny thing was dressed in some sort of shiny stuff, like metal, that crisscrossed it in strips. It reminded me of something, and finally I got it. Our early airmen, trying for altitude records high in the stratosphere, had laced their bodies with heavy canvas strips to keep them from disrupting outward in the lessened pressure of the heights. The metallic-looking strips lacing this little body looked like those.

"IT must be that the thing comes from depths that make this forty-thousand-foot level seem high and rarified," I whispered to Belmont. "Hundreds of thousands of feet, perhaps. They've heard us working at the ore, and have come far up here to see what was happening."

"But to go through solid concrete—" muttered Belmont, dazed.

"That would be due to the way the atoms of their substance have been compressed and altered. They might be like the stuff on Sirius' companion, where substance weighs a ton to the cubic inch. That would allow the atoms of their bodies to slide through far-spaced atoms of ordinary stuff, as lead shot could pour through a wide-meshed screen. . . .

Belmont was so silent that I stared at him. He was paying no attention to me, probably hadn't even heard me. His eyes were wild and wide.

"There's another of them. And another! Frank—we're mad. We must be!"

Two more luminous swirls had appeared in the depths of the concrete. Two more tiny little human figures slowly appeared as, breasting forward like deep-sea divers against solid water, they plodded toward the face of the wall.

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And now three mannikins, laced in with silvery-looking metal strips, stared at us through several inches of the milky appearing concrete. Belmont clutched my arm again.

"Their eyes!" he whispered. "They certainly don't like us, Frank! I'm glad they're like things you see under a low-powered microscope instead of man-sized or bigger!"

Their eyes were most expressive—and threatening. They were like human eyes—and yet unlike them. There was a lack of something in them. Perhaps of the thing we call, for want of a more definite term, Soul. But they were as expressive as the eyes of intelligent children.

I read curiosity in them as intense as that which filled Belmont and me. But over and above the curiosity there was—menace.

Cold anger shone from the soulless eyes. Chill outrage, such as might shine from the eyes of a man whose home has been invaded. The little men palpably considered us trespassers in these depths, and were glacially enfuriated by our presence.

And then both Belmont and I gasped aloud. For one of the little men had thrust his hands forward, and hands and arms had protruded from the wall. Like the hands of a person groping a way out of a thick mist, theory hovered there; and then the tiny body followed it. And as if at a signal, the other two little men moved forward out of the wall too.

The three metal-laced mannikins stood in the open air of the tunnel, with their backs to the wall that had offered no more resistance to their bodies than cheese offers to sharp steel. And behind them there were no holes where they had stepped from. The face of the concrete was unbroken.

The atomic theory must be correct, I thought. The compacted atoms of which they were composed slid through the stellar spaces between ordinary atoms, leaving them undisturbed.

But only a small part of my mind concerned itself with this. Nine-tenths of it was absorbed by a growing, indefinable fear. For now the three little men were walking slowly toward us. And in every line of their tiny bodies was a threat.

Belmont looked at me. Our hands went uncertainly toward our revolvers. But we did not draw them. You don't shoot at children; and the diminutive size of the three figures still made us consider them much as harmless children. Though in the back of my mind, at least, if not in Belmont's, the indefinable fear was spreading . . .

The three stopped about a yard from us. Belmont was standing, and I was still seated, almost in a paralysis of wonder, on my rock fragment. They looked far up at Belmont and almost as far up at me. Three little things that didn't even come up to our knees!

AND then Belmont uttered a hoarse cry and dragged out his gun at last. For one of the three slid his tiny hand into the metal lacing of his body and brought it out with a sort of rod in it about the size of a thick pin, half an inch long. And there was something about the look in the mannikin's eyes that brought a rush of frank fear to our hearts at last, though we couldn't even guess at the nature of the infinitesimal weapon he held.

The mannikin pointed the tiny rod at Belmont, and Belmont shot. I didn't blame him. I had my own gun out and trained on the other two. After all, we knew nothing of the nature of these fantastic creatures who had come up from unguessable depths below. We couldn't even approximate the amount of harm they might do—but their eyes told us they'd do whatever they could to hurt us.

An exclamation ripped from my lips as the roar of the shot thundered down the tunnel.

The bullet had hit the little figure. It couldn't have helped but hit it; Belmont's gun was within a yard of it, and he'd aimed point-blank.

But not a mark appeared on the mannikin, and he stood there apparently unhurt!

Belmont fired again, and to his shot

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I added my own. The bullets did the little men no damage at all.

"The slugs are going right through the things!" yelled Belmont, pointing.

Behind the mannikins, long scars in the rock floor told where the lead had ricocheted. But I shook my head in a more profound wonder than that of Belmont's.

"The bullets aren't going through them! *They're going through the bullets!* The stuff they're made of is denser than lead!"

The little man with the tiny rod took one more step forward. And then I saw something that had been lost for the time in the face of things even more startling. I saw how the tiny tracks had been made.

As the mannikin stepped forward, I saw his advancing foot sink into the rock of the floor till the soles of his metallic-looking shoes were buried!

That small figure weighed so much that it sank into stone as a man would sink into ooze!

And now the microscopic rod flamed a little at the tip. And I heard Belmont scream—just once.

He fell, and I looked at him with a shock too great for comprehension, so that I simply stood there stupidly and saw without really feeling any emotion.

The entire right half of Belmont's chest was gone. It was only a crater—a crater that gaped out, as holes gape over spots where shells bury themselves deep and explode up and out.

There had been no sound, and no flash other than the minute speck of flame tipping the mannikin's rod. At one moment Belmont had been whole; at the next he was dead, with half his chest gone. That was all.

I heard myself screaming, and felt my gun buck in my hand as I emptied it. Then the infinitesimal rod turned my way, and I felt a slight shock and stared at my right wrist where a hand and a gun had once been.

I heard my own yells as from a great distance. I felt no pain; there are nerve shocks too great for pain-sensation. I felt only crazed, stupefied rage.

I leaped at the three little figures. With all my strength I swung my heavily booted foot at the one with the rod. There was death in that swing. I wanted to kill these three. I was berserk, with no thought in mind other than to rend and tear and smash. That kick would have killed an ox, I think.

It caught the little man in the middle of the back. And I screamed again and sank to the floor with the white-hot pain of broken small bones spiking my brain. That agony, less than the shock of a losing a hand, I could feel all right. And in a blind haze of it I saw the little man smile

Interplanetary Thrills in a

THE MOON

GRIM MARTIAN

The Brain

of

By JOHN W.

In the Next THRILLING

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bleakly and reach out his tiny hand toward Belmont, disregarding me as utterly as though I no longer existed.

And then through the fog of my agony I saw yet another wonder. The little man lifted Belmont's dead body.

With the one hand, and apparently with no more effort than I would have made to pick up a pebble, he swung the body two inches off the floor, and started toward the concrete wall with it.

I TRIED to follow, crawling on my knees, but one of the other little men dashed his fist against my thigh. It sank in my flesh till his arm was buried to the shoulder, and the mannikin staggered off-balance with the lack of resistance. He withdrew his arm. There was no mark in the fabric of my clothing and I could feel no puncture in my thigh.

The little man stared perplexedly at me, and then at his fist. Then he joined the other two. They were at the face of the concrete wall again.

I saw that they were beginning to look as though in distress. They were panting, and the one with the rod was pressing his hand against his chest. They looked at each other and I thought a message was passed among them.

A message of haste? I think so. For the one picked up Belmont again, and all three stepped into the concrete. I saw them forge slowly ahead through it. And I saw Belmont, at arm's length of the little man who dragged him, flatten against the smooth side of the stuff.

I think I went a little mad, then, as I understood at last just what had happened.

The little men had killed Belmont as a specimen, just as a man might kill a rare insect. They wanted to take him back to their own deep realms and study him. And they were trying to drag him through the solid concrete. It offered only normal resistance to their own compacted tons of weight, and it didn't occur to them that it would to Belmont's body.

I flung myself at the wall and clawed at it with my left hand. The body of my friend was suspended there, flattened against it as the little man within tried to make solid matter go through solid matter, ignorant of the limitations of the laws of physics as we of earth's surface know them.

They were in extreme distress now. Even in my pain and madness I could see that. Their mouths were open like the mouths of fish gasping in air. I saw one clutch the leader's arm and point urgently downward.

The leader raised his tiny rod. Once more I saw the infinitesimal flash at its tip. Then I saw a six-foot hole yawn in the concrete around Belmont's body. What was their ammunition? Tiny pellets of gas, so com-

[*Turn page*]

Novelette of Other Worlds!

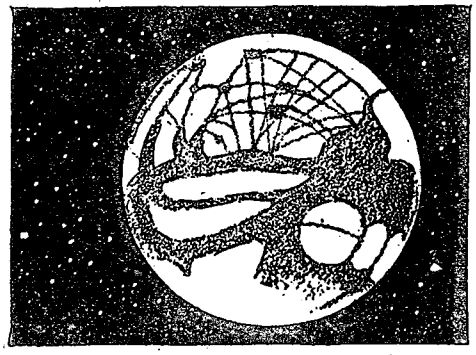
MENACE IN

Stealers

Mars

CAMPBELL, Jr.

WONDER STORIES



MARS

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pressed at the depths they inhabited that it was a solid, and which expanded enormously when released at these pressures? No one will ever know—I hope!

In one last effort, the leader dragged the body of my friend into the hole in the concrete. Then, when it stubbornly refused to follow into the substance through which they could force their own bodies, they gave up.

One of the three staggered and fell, sinking in the concrete as an overcome diver might sink through water to the ocean's bed. The other two picked him up and carried him. Down and away.

Down and away . . . down from the floor to the forty-thousand-foot level, and away from the surface of the concrete wall.

I saw the luminous trails they left in the concrete fade into indistinct swirls, and finally die. I saw my friend's form sag back from the hole in the concrete, to sink to the floor.

And then I saw nothing but the still form, and the ragged, six-foot crater that had been blown soundlessly into the solid concrete by some mysterious explosive that had come from a thing no larger than a thick pin, and less than half an inch long. . . .

THEY found me an hour later—men who had come down to see why neither Belmont nor I answered the ring of the radio phone connecting the low level with the surface.

They found me raving beside Belmont's body, and they held my arms with straps as they led me to the shaft.

They tried me for murder—and sabotage. For, next day, I got away from the men long enough to sink explosive into the forty-thousand-foot level and blow it up so that none could work there again. But the verdict was not guilty in both cases.

Belmont had died and I had lost my right hand in an explosion the cause of which was unknown, the martial court decided. And I had been insane from shock when I destroyed the low level, which, even with the world famished for copper, was almost too far down to be commercially profitable anyway.

They freed me, and I wrote in my report—and some filing clerk has, no doubt, shrugged at its impossibility and put it in a steel cabinet where it will be forever ignored.

But there is one thing that cannot be ignored. That is, those mannikins, those microscopic giants—if ever they decide to return by slow stages of pressure-acclimation to the earth's surface!

Myriads of them, tiny things weighing incredible tons, forging through labyrinths composed of soft veins of rock like little deep-sea divers plodding laboriously but normally through impeding water! Beings as civilized as ourselves, if not more so, with infinitely deadly weapons, and practically invulnerable to any weapons we might try to turn against them!

Will they tunnel upward some day and decide calmly and leisurely to take possession of a world that is green and fair, instead of black and buried? If they do, I hope it will not be in my lifetime!

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ZARNAK

"The Metal World"

By Max Plaisted

IN THE YEAR 2936, I, ZARNAK --- SET OUT FOR THE TRANS-PLUTO PLANET URGO IN MY SPACE-PLANE --- ON A STRANGE SEARCH ---

I HAD BECOME DISGUSTED WITH MY OWN WORLD. INCESSANT WARS THROUGHOUT THE LAST THOUSAND YEARS AND A GREAT PLAGUE HAD DESTROYED MOST OF THE EARTH POPULATION. ALL KNOWLEDGE OF SCIENCE HAD DIED AND HUMANITY HAD SLIPPED BACK INTO AS STAGNANT A PERIOD AS THAT OF THE MIDDLE AGES, OF THE 9TH CENTURY. MY ANCESTORS, IN THE FORTIFIED LABORATORIES IN THE ROCKY MOUNTAINS, POSSESSED THE ONLY SCIENTIFIC KNOWLEDGE EXTANT. THEY TRIED TO SHARE IT WITH HUMANITY, ONLY TO MEET DEATH FOR WITCHCRAFT.

MY FATHER, MERGO, THE SCIENTIST --- ONE DAY FOUND AN ANCIENT NEWSPAPER CLIPPING DATED 2528, TELLING OF A SCIENTIST WHO HAD GATHERED TOGETHER FINE, INTELLIGENT SPECIMENS OF HUMANITY, AND LEFT THE EARTH IN A SPACE-SHIP ---- DESTINATION UNKNOWN!

WE BUILT ONE --- AND I SET OUT ALONE TO FIND THE DESCENDANTS OF THIS MIGRATION --- HOPING THAT, TOGETHER, WE MIGHT RESTORE THE WORLD TO ITS ANCIENT GLORIES!

HOWEVER, A METEORITE STRUCK MY PLANE, PLUGGING THE ROCKET TUBES AND CARRYING ME IN ITS MAD DASH TOWARD THE SUN. I PASSED VENUS AND MERCURY, TOO FAR AWAY FOR ME TO BE ATTRACTED INTO THEIR FIELDS OF GRAVITY ---

IT GREW TERRIFICALLY HOT INSIDE MY PLANE! I COULD NOT WORK THE LIGHT WAVE-TELEVISION SET TO CONTACT MY LABORATORY ON EARTH --- FOR A DESPERATE MOMENT I CONSIDERED LEAPING OUT ---

YOU FOOL --- YOU CAN'T JUMP OUT --- YOU'LL JUST BE A HUMAN METEOR DASHING TO THE SUN!

AN --- AN UNKNOWN PLANET OF SOME SORT! THE LIGHT OF THE SUN WAS SO BRIGHT I COULDN'T SEE IT SO FAR AWAY --- UNTIL IT BEGAN TO PASS ACROSS THE SUN!

FEVERISHLY I SET TO WORK WITH MY CALCULATORS --- IT WAS A BARE HOPE --- A MIRACLE

YES --- ITS SPEED IS SLOW --- WHY --- I BELIEVE I'M GOING TO HIT IT! THIS ANCIENT 20TH CENTURY TREATISE SPEAKS OF THE FACT THAT THERE MUST BE A PLANET BETWEEN MERCURY AND THE SUN --- THIS ASTRONOMER SAYS THAT, THOUGH UNDISCOVERED, IT HAS BEEN NAMED VULCAN!

AT LAST MY PLANE SWUNG OFF ITS COURSE, ATTRACTED INTO THE GRAVITATION OF VULCAN ---

[Turn page]

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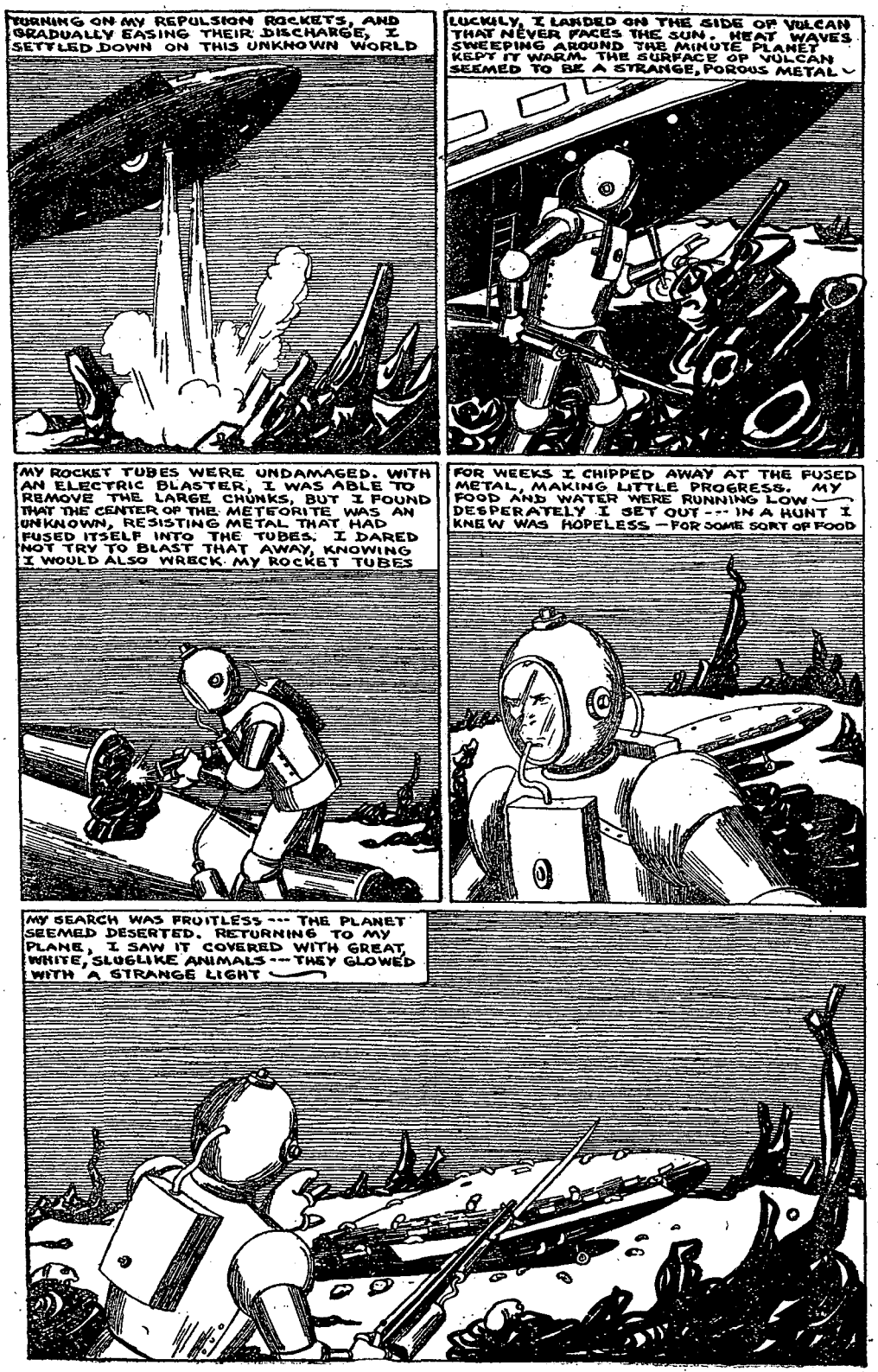
TURNING ON MY REPULSION ROCKETS, AND GRADUALLY EASING THEIR DISCHARGE, I SETTLED DOWN ON THIS UNKNOWN WORLD
LUCKILY, I LANDED ON THE SIDE OF VULCAN THAT NEVER FACES THE SUN. HEAT WAVES SWEEPING AROUND THE MINUTE PLANET KEPT IT WARM. THE SURFACE OF VULCAN SEEMED TO BE A STRANGE, POROUS METAL
MY ROCKET TUBES WERE UNDAMAGED. WITH AN ELECTRIC BLASTER, I WAS ABLE TO REMOVE THE LARGE CHUNKS, BUT I FOUND THAT THE CENTER OF THE METEORITE WAS AN UNKNOWN, RESISTING METAL THAT HAD FUSED ITSELF INTO THE TUBES. I DARED NOT TRY TO BLAST THAT AWAY, KNOWING I WOULD ALSO WRECK MY ROCKET TUBES
FOR WEEKS I CHIPPED AWAY AT THE FUSED METAL, MAKING LITTLE PROGRESS. MY FOOD AND WATER WERE RUNNING LOW — DESPERATELY I SET OUT --- IN A HUNT I KNEW WAS HOPELESS — FOR SOME SORT OF FOOD
MY SEARCH WAS FRUITLESS --- THE PLANET SEEMED DESERTED. RETURNING TO MY PLANE, I SAW IT COVERED WITH GREAT WHITE, SLUGLIKE ANIMALS --- THEY GLOWED WITH A STRANGE LIGHT —

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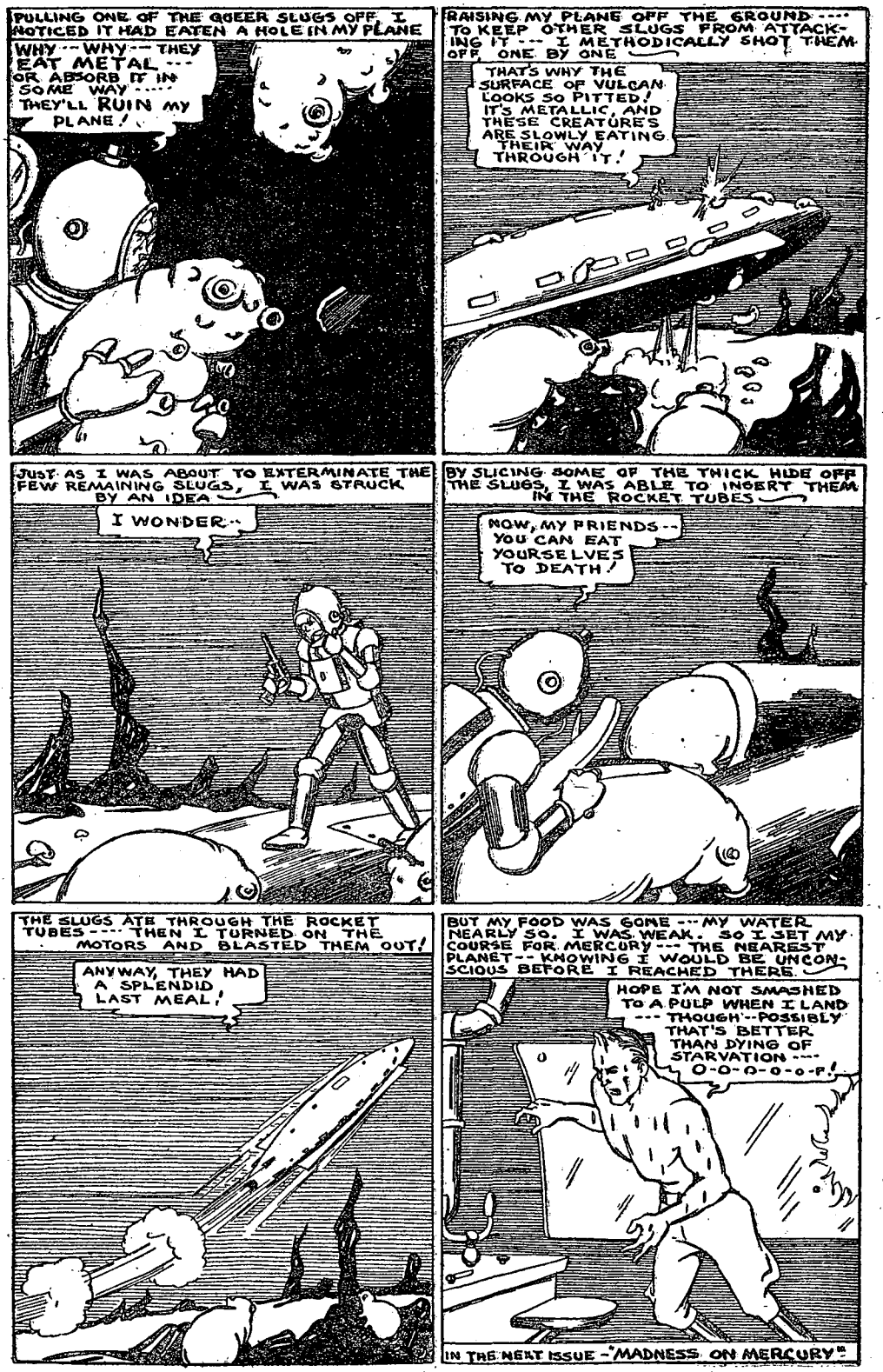
PULLING ONE OF THE QUEER SLUGS OFF, I NOTICED IT HAD EATEN A HOLE IN MY PLANE
WHY -- WHY -- THEY EAT METAL --- OR ABSORB IT IN SOME WAY ---- THEY'LL RUIN MY PLANE!
RAISING MY PLANE OFF THE GROUND ---- TO KEEP OTHER SLUGS FROM ATTACKING IT --- I METHODICALLY SHOT THEM OFF, ONE BY ONE
THAT'S WHY THE SURFACE OF VULCAN LOOKS SO PITTED! IT'S METALLIC, AND THESE CREATURES ARE SLOWLY EATING THEIR WAY THROUGH IT!
JUST AS I WAS ABOUT TO EXTERMINATE THE FEW REMAINING SLUGS, I WAS STRUCK BY AN IDEA
I WONDER--
BY SLICING SOME OF THE THICK HIDE OFF THE SLUGS, I WAS ABLE TO INSERT THEM IN THE ROCKET TUBES
NOW, MY FRIENDS -- YOU CAN EAT YOURSELVES TO DEATH!
THE SLUGS ATE THROUGH THE ROCKET TUBES ---- THEN I TURNED ON THE MOTORS AND BLASTED THEM OUT!
ANYWAY, THEY HAD A SPLENDID LAST MEAL!
BUT MY FOOD WAS GONE --- MY WATER NEARLY SO. I WAS WEAK. SO I SET MY COURSE FOR MERCURY --- THE NEAREST PLANET -- KNOWING I WOULD BE UNCONSCIOUS BEFORE I REACHED THERE
HOPE I'M NOT SMASHED TO A PULP WHEN I LAND --- THOUGH -- POSSIBLY THAT'S BETTER THAN DYING OF STARVATION --- O-O-O-O-O-O-F!
IN THE NEXT ISSUE - "MADNESS ON MERCURY"

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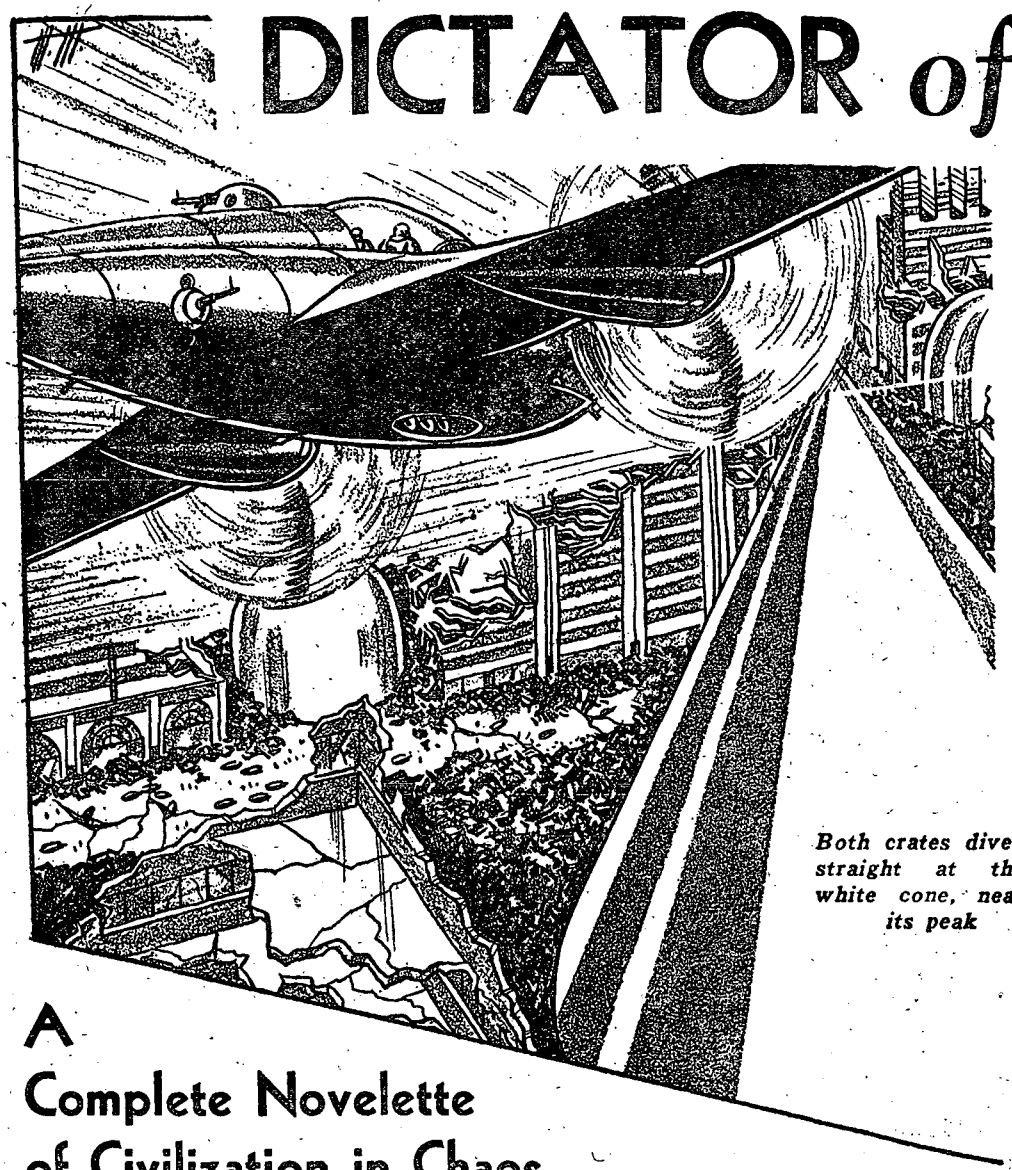
DICTATOR of



Both crates dived straight at the white cone, near its peak

A Complete Novelette of Civilization in Chaos

CHAPTER I

Light of Doom

AFTERWARD, Dale Pruett cursed himself as the greatest fool ever born into the world. As the first Secretary of Military Science, the newly created portfolio, he should have gone into action at the beginning.

The year had brought the deadliest winter within the knowledge of man, of history. Florida and California, each noted for their salubrious climates, had had two feet of snow and sub-zero weather that had lasted for a grim two months.

A Fiendish Wizard Straitjackets the Forces

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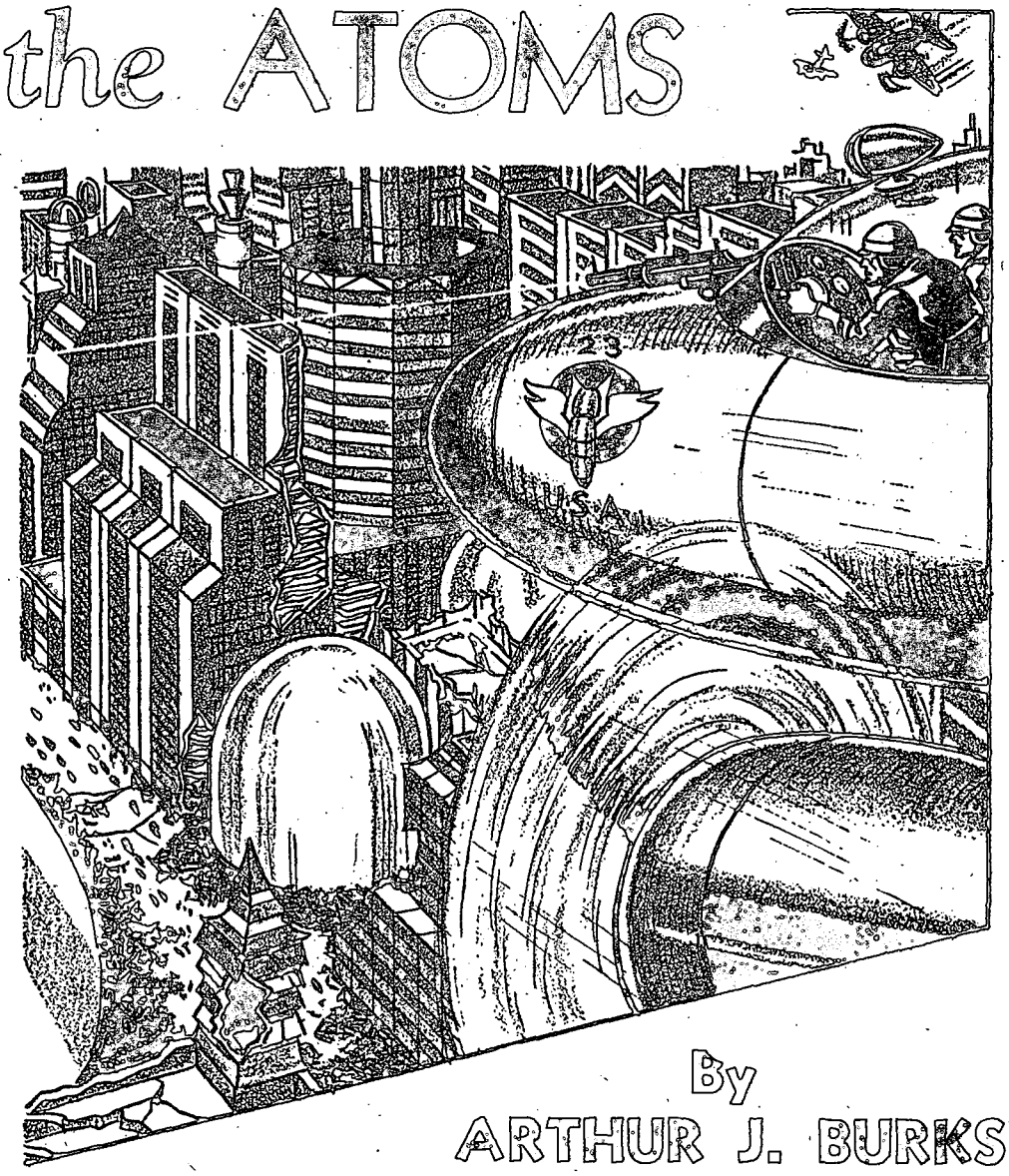
the ATOMS



By
ARTHUR J. BURKS

Author of "Manape the Mighty," "The Mind Master," etc.

New York City had experienced a ghastly winter, with a mean temperature of forty-seven degrees below zero. Then the winter had broken, and raging floods swept the land.

Later, a golden, brilliant spring, in which people quickly forgot the bleak horror of winter. They forgot, yes, until the heat of the sun, in early March, became unbearable, until a hundred and four temperature at midnight was common.

This was spring! If the heat increased proportionately, nothing would live in midsummer south of a line drawn westward from Quebec. Even north of that would be a blazing horror. Scientists offered ex-

of Science to Wreak a Cosmic Catastrophe!

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planations. Sun spots, they said, as though that explained anything. It seemed as though Nature herself were trying to destroy mankind, perhaps even the earth. Mankind must find a way to combat the growing chaos. From sub-zero to boiling heat in less than thirty days! Perhaps, out beyond Earth's stratosphere, at the bottom of which man lived, as fish at the bottom of the sea, something cataclysmic was happening.

Not even Dale Pruett thought, at first, to link the dread happenings to a human agency.

Dale Pruett was walking, late at night, along Fifth Avenue, down near Washington Square, when his eyes suddenly lifted to the sky, dead ahead, along the glowing canyons of mid-Manhattan.

A thin pencil of flame, the color of dark orange, stabbed from some spot within a block or two of Times Square, straight into the heavens, like a streak of lightning made straight, and suddenly frozen in place. He watched it until his eyes could no longer see how far it went. It seemed to be reaching out into infinity.

THERE was something loathsome about that pencil of light. Pencil? It must have been all of fifty feet across, seeming to maintain the same dimensions unbroken as far as he could see, allowing for the diminution, the narrowing.

A miasma of menace seemed to flow out of that eerie beam, to envelop all of New York City. Pruett paused, holding his breath. Sweat spilled over his body in rivulets. His face was tortured. He felt that his burdens were greater than he could bear. Thirty years old, and the responsibility of a nation's life rested in his hands! Exactly that, for martial law had been in effect for twenty days, and he was secretary of Military Science, senior in responsibility to the Secretary of War.

Out beyond the cylinder of light the sky shaded from a sickly lemon to a dull, ghastly purple. In the weird light the buildings of Manhattan stood silhouetted like shadowy pinnacles etched against the night sky.

Then he was conscious of a quivering in the air, as though the very air were whispering, laughing in mockery. It seemed like a sound just below, or above, the range of the human ear. The air was breathing!

If this were true, and he were not merely dizzy with the scorching heat, then here might be the hint of the cosmic disturbances which had thrown the world's seasons into a hellish turmoil.

He started running uptown, toward that lambent beam. But he couldn't make it. He fell, time after time, like a man far gone with thirst on the floor of a desert at midday. Yet he knew he must reach that spot, see what made the shaft of flame against the sky. Just to look at it was to feel a tingling of abysmal horror all through him. There was something supernaturally hypnotic about it.

"I've got to get there, see what it is," he muttered.

In the final spurt, Pruett crawled on hands and knees to within a block of the pencil of flame. It was dimming now, a little, due to the fact that the sun was rising. A fiery red ball.

Pruett was prone, peering around the corner of a single story building, when it happened.

The light snapped off, as though someone had turned a switch.

There remained only the lemonish glow, slowly dying out, as that loathsome beam retreated before the advance of the sun.

Then an explosion which might have been the blasting of Krakatoa shook Manhattan from end to end. It was like the crack of doom. Like two volcanoes erupting simultaneously.

It came just as Dale Pruett spotted the building from the roof of which, apparently, the light ray had shot into the sky. He knew the building well. Twenty years before it had been a skyscraper, one of the world's tallest buildings. The Dorgan Building—fifty stories high. A spire, reaching into the sky.

Pruett's eyes were glued on that ripped the walls apart, from top to building when the explosion came. It

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bottom, from side to side, as though it had been a house of cards.

HE had seen the Dorgan Building disintegrate! It had seemed to fly outward in all directions, as though it had been a great hand grenade of many segments which had exploded. Pieces of it were hurled like bullets through buildings all around it. One great fragment of wreckage had torn out a corner of the building behind which Pruett was sprawling, had gone past him and utterly demolished half a block of elevated railway structure.

The buildings surrounding the Dorgan seemed to sag, to bend into themselves, to collapse like huge balloons deflating. Their crash to the ground was an earthquake in itself. And then, his dazed brain tried to find some simile for what next he saw—

Minerva, springing full-grown from the head of Zeus? A mountain thrusting itself up from the sea, across a sea lane which for years had been free to the passage of ships?

Not strong enough, such similes. For the Dorgan Building was gone, and in its place, straight, and white, and glowing with silvery brilliance, was another building! It was a thing of awesome beauty. It reached into the sky to about the same height as had the Dorgan Building. It was a cone, reaching gradually to a point, an astounding example of unearthly architecture.

But there were no doors, no windows! Just the cone, of some material the composition of which Dale Pruett could not guess. Nor could he guess what had happened. But swiftly he realized one thing: that immense white cone, that giant pyramid, was an unconjecturable menace to New York City. A fresh menace to a stricken city, tortured by Arctic chill, by furnace blasts almost beyond human endurance, and now this!

The Dorgan Building had given birth to another structure, like none ever seen on earth, and had destroyed itself in the parturition.

Heaped at the base of the snowy cone was the rubble of the Dorgan Building, like shale at the foot of a precipice. Powdered stone and plaster, twisted beams, with here and there shards of glass, eerily like the eyeballs of humanity, staring blindly into the rising sun.

Out of it rose the white nightmare, which couldn't be—yet was!

CHAPTER II

Voice from the Cone

SHRILL whistles skirled. Officers and men of the Army, Navy, Marine Corps and National Guard, organizations representing what law remained in New York City were coming on the double quick. Every building in Manhattan held its quota of soldiers, whose task was to prevent looting, to care for human beings being driven stark, staring mad by heat and terror. Columns of troops patrolled the streets surrounding what had been the Dorgan Building.

Dale Pruett moved slowly toward the white miracle, hypnotically, half fascinated with horror. Officers recognized the young cabinet officer. Hands snapped to swift salute as he passed.

"What is this thing, anyway, sir?" asked a thin-waisted, correctly uniformed colonel.

"I don't know, Colonel. I was walking. I saw a strangely colored light probing the sky. I was hurrying here—only in time to see the Dorgan Building reduced to nothingness, and this white column, cone, whatever you wish to call it, standing in its place."

"But what in the world is it?"

"I haven't the slightest idea." Pruett shook his head. "But that light I saw had something to do with it—of that I am sure. We've got to find out. But first we've got to examine that building. What does it look like to you, sir?"

"A Gargantuan blob of icecream. Sounds screwy, doesn't it, Mister Secretary? But you find a better name and I'll accept correction without a murmur."

Dale Pruett knew Colonel Gamborg

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Liesen to be a bluff officer, but one known for his bravery and integrity. A man who rated medals enough, most of them for bravery, to fill two trunks. A man who laughed at death and danger.

"There doesn't seem to be any way into this outlandish piece of architecture, sir," said Colonel Liesen.

"No," Pruett reluctantly agreed, "but we've got to find out what it is, anyhow. See here, Colonel, this thing isn't here by chance. For all we know, it may be a visitation from interstellar space. Mine is the responsibility of finding out. You can aid me there. Station detachments, armed with auto-rifles, gas-throwers, machine-guns on such surrounding buildings as are left standing, as I move on ahead. There's no surmising what's inside this thing. Maybe nothing. Maybe it's a solid. Maybe— Well, station your troops."

The colonel barked orders. Soldiers snapped to attention, obeyed, hurrying forward to take up their posts at the relayed commands of their officers. In five minutes the cone was covered at points from which could blaze devastating fire. Dale Pruett was conscious of sudden embarrassment. Ridiculous — marshaling a couple of regiments to fight off a possible attack by a *building!*

And yet that building had brought death to New York. Pruett didn't have to hear the sirens of ambulances to know that; nor to remember the hail of havoc-spreading wreckage that had fallen on New York; nor the phantasm he had himself seen.

This white cone was a menace beyond measure. It was catastrophe, and nothing whatever was known of its nature, of how it had come there, or of its purpose, if any. And it must have some.

With the troops in place, all save a company surrounding the colonel, acting as his orderlies and the like, Colonel Liesen looked at Dale Pruett.

"MY position is inferior to yours, sir," he said, "but *your* position in this nation is a vital one. If anything should happen to you, the only important representative of Washington on the spot with material powers—" His jaws snapped stubbornly. "I am going to send some men to investigate the nature of that building!"

"I can't allow you to send men into unknown danger," said Pruett.

"A soldier's job is to hold himself in readiness to die if need be," said the colonel grimly. "But I'll ask for volunteers." He whirled on his men.

"I want ten men to investigate that giant cone," he bellowed. "It may strike you dead when you touch it. It may swallow you up. It may— Nobody knows what may happen . . . Ten volunteers!"

The white-faced company, led by their captain, took two steps forward, halted. Colonel Gamborg Liesen's face was proud as he faced Pruett again.

"Take your pick, sir," he said.

Pruett selected the first ten men.

"Surround the building," he instructed them, "at approximately equal intervals between men. When your colonel signals, close in on it. All I ask you to do is examine its substance, return here, and tell me what you think it is, its temperature, anything that may occur to you."

Rifles on shoulders, they marched stiffly away.

Side by side, Pruett and Colonel Liesen watched the ten men close on the building as their commander's sharp whistle shrilled. A waiting silence had fallen over all New York City.

Four of the soldier volunteers were visible to Pruett and Colonel Liesen. Pruett watched them intently.

The four men had just reached the white walls of the snowy nightmare. Suddenly their hands lifted to touch it—and all four of them vanished as though they had never been!

There had been the sound of their heavy shoes on the rubble. Wraith-like, they had marched straight into the whiteness—to be erased without a trace! Pruett and Colonel Liesen stared at each other in horror. They licked dry lips.

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The cone had swallowed the volunteers! Absorbed them, sucked them in, as into a pit of quicksand.

The colonel whirled, whistle to his lips. There seemed no sense in what he was about to do, but he was a soldier. He was following a soldier's reactions.

"I'm opening fire on that—that—" he gritted.

"But what good will it do? Our weapons—"

"Are all we have for offense. We've *got* to find out whether they are of any use!"

The whistle keened piercingly. Instantly the colonel had the attention of his men on the surrounding buildings.

"By volley, *fire!*"

With crackling roars bullets poured straight at the white cone. Pruett knew as well as Colonel Liesen that those marksmen were crack shots. Thousands of rounds—as rifles rolled and machine-guns chattered—sped into that white cone. But not one bullet entered it. Nor did the rifle grenades which were hurled against it.

The white building *swallowed* those bullets—swallowed the grenades, as it had swallowed the volunteers! And just as silently.

Watchers outside should have been able to hear the hail of bullets against the whiteness—against anything which was so plainly visible as this white column. But all they heard were the shattering explosions from the spots where the soldiers were stationed, firing into the cone.

THE soldiers, too, suddenly realized what was happening—or what was *not* happening. Their rising terror, their sudden, superstitious awe of something supernatural became apparent in their instantly accelerated swiftness of fire, as though by its sheer fury they would destroy the smooth white cone.

The surface of that cone should have been scarred by bullet holes, by the black stains of smashed lead and steel. But after five minutes of rapid firing, there was no single mark to indicate that even one bullet had touched the white horror!

Pruett and Colonel Liesen stared into each other's eyes. The colonel moistened dry lips, shook his head.

"There ain't," he whispered, "no such animal. I see it, but it isn't there, understand? Maybe my not knowing what to do— Well, I'm an old man, just a colonel. You're a cabinet officer. Now what?"

"I don't know." Pruett's voice was a groan. "It's like shooting bullets into a void. They vanish, utterly ineffectual, when they touch. There's no sense to it. But we've got to find sense!"

He stopped. What was there to be said, after all? Colonel Liesen signaled for the firing to stop. The silence for a minute was as stupefying as clamorous sound. Then, abrupt, eerie, yet plain as if the shouter had stood on the rubble of the Dorgan Building, right over their heads, came a cry of terror, of anguish.

"Colonel Liesen! Colonel Liesen! Yell to the men to run for their lives! They're going to—"

And that was all. Silence within the cone followed (the voice must have come from the cone) as the cry was chopped off. The man yelling from the heart of the white mystery had been silenced. He had tried to cry out a warning—had hinted that "They"—

Colonel Liesen's face was dead white. It was perhaps the first time in his life that Gamborg Liesen had ever been afraid. It had taken the supernatural to put that fear into his courageous heart.

He had started to put his whistle to his lips again when a four-story building, across the lot from where they stood, and in which a platoon of troops was stationed, exploded like a monster bomb.

One moment it was there, filled with soldiers pointing rifles and machine-guns. The next moment it was gone. No soldiers. No rifles. No guns. Nothing. Save fresh rubble—and a white mound of a building that looked strangely like the crown of a derby hat!

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It was then that the colonel went mad. He sprang up the rubble toward the white cone into which his volunteers had vanished.

"I'm going to damn well find out who 'they' are!" he shouted, before Pruett could clutch and hold him. He was emptying his pistol into the whiteness as he lunged ahead.

Laughing like a maniac, he flung his pistol squarely at the white curve of the cone. It could be seen against the whiteness for one flash on its gleaming barrel, at the instant of contact. Then it was gone, as though it had sunk into milk.

Then Liesen had hurled himself at the cone, too. The next instant he disappeared.

Nothing more—save that even as frightened soldiers who had seen one of their own platoons made invisible before their eyes broke into riotous flight before a danger they could not understand, the building from which they were fleeing exploded. And in its place and their place was an appalling silence, a horrible emptiness. And a second white building, oddly shaped like the crown of a derby hat!

Three white nightmares. And Dale Pruett, his hands gripped, lips tight to a disappearing line, *knew* in that instant that there was more to come.

His shout sped the surviving soldiers on their way. But as they fled there was a wild prayer in his heart.

"God, show me the way to an explanation—and a counter-offensive!"

CHAPTER III

Sky Birds

IT was a white-faced group who sat about the circular table in a room in the heart of Manhattan that night. Dale Pruett, General Monet, Chief of Staff of the Army, Admiral Logan of the Navy, Lieutenant-general Daling of the Marines, the Secretary of War, Kamin, New York's mayor, Pruett's own aides, a captain of the Navy, a colonel of Marines, and Secretary of Air Lupin.

"We're facing a new instrument of war, gentlemen," said Pruett grimly. "It has taken us all by surprise. We have nothing that is effective against it. For the last ten hours our tubes and bridges have been choked with people, fleeing to the open. Latest reports indicate that forty thousand people have been slain. I've watched refugees, crossing Queensboro, Williamsburg, Brooklyn and George Washington Bridges. The chaos is indescribable. The whole city is making an exodus."

That the white buildings were of human origin everybody believed, yet not once had a human voice—save that from one of the first four men who had vanished into the original cone—come forth. There had been no demands, no ultimatum nor proposals.

But regularly, once each hour, since Pruett had drawn every living thing out of the area where the catastrophe had befallen, there had been a fresh explosion. Many buildings had been shaken into the streets, all of which were now impassable except to people on foot, and few dared such travel, because of the towering, half-wrecked buildings on either hand.

Moment by moment buildings dropped their fronts into streets, showering down tons of masonry. Airplanes were keeping watch over the area, over Times Square, where the first catastrophe occurred. There now were fifteen new miracle structures, forming a sort of broken circle about that first one.

The trend of movement of the explosions, however, was downtown. Five or six buildings along Forty-Fourth Street exploded, giving birth to the white monsters. Then one on Eighth Avenue and Forty-Second. Then one on Park Avenue. Grand Central Station went, and in its place was a gorgeously beautiful mound of pure white.

"Within a week," said Pruett, "not one of New York's original buildings will be left standing. In their place will be these invading cones, which are impervious to attack, and which we cannot enter—and return alive."

"You feel sure that Colonel Gamborg Liesen and his men are dead?"

"That's my guess. I don't know."

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The Secretary of War rose suddenly and switched on the radio. Nothing came out but howls, as though the air were filled with static. This lasted a moment or two, sounding oddly like a great sea of military tanks on the march! Then—

"Secretary Pruett! Secretary Pruett!"

Silence instantly gripped the war council.

"Great Scott," said Pruett, "that's Liesen's voice! But how can we answer him?"

"THIS is Colonel Liesen speaking, Pruett!" the voice went on. "There is nothing you can do against these cones. I am speaking now with our enemy listening and censoring every word I speak. I can't tell you who the enemy are, or from what country—only that they are invincible to any sort of armament we have today. They bid me tell you that unless the city capitulates, it will be utterly destroyed. They state also that they are in position to do this to every city in the world. They are making New York an example. They know that the story of New York's catastrophe is being reported to the world. They wish this speech to be, also. They call themselves the Internationals, and their leader regards himself as World Dictator! The massing of the power of sundered atoms—"

The voice died out, with that sudden cessation of sound that left an icy chill about the heart. But Colonel Liesen was safe. Perhaps his men inside that first cone were, also. The world had friends in the enemy camp, then, even though they were prisoners.

Great beads of perspiration broke out on the faces of the listeners. The Secretary of Air jumped to his feet.

"With your permission, sir," he said, "I want to try one more thing. It's ghastly, trying to fight against the absolutely unknown."

"Colonel Liesen was trying to give us a hint when he was silenced," whispered Pruett. "He wasn't silenced by violence, either. He was simply shut off as a light is switched off, or a radio dialed to another station. We cannot communicate with the occupants of the new buildings. They can reach us at will, talk to us through our own radios. Pardon, Mister Air Secretary—you were suggesting?"

"We haven't tried to do anything from above. We have bombs which could blow New York's biggest building off the map, with power as explosive as that which the invading cones seem to exercise. Let's try them!"

"It must be our last attempt," said Pruett. "I can't jeopardize more lives. I wonder why we don't hear from the President?"

"Possibly," said the Secretary of War, "because though New York City can contact the outside world, we are surrounded by a wall of force through which nothing can penetrate inwardly."

Half an hour later the group had taken their lives in their hands to approach the devastated area in which glinted the white cones, where the buildings to right and left of them might go at any second, blasting the intrepid group of men into nothingness.

The Secretary of Air had already sent messages to the flyers over New York City, and now a score of planes were diving straight at their targets. From the air the cones must have looked like monster toadstools. Pruett would have given much to have been flying one of those bullet-swift planes. But his duty was in the midst of the growing desolation.

The planes dived. Spheres of death began to drop from their bellies. With the newest instruments, they couldn't miss. Bombing from planes was now child's play.

"Great Scott!" cried Air Secretary Lupin. "I forgot that two of those bombs will shake half of what remains of New York into the street."

"Wait!" said Pruett, with grim intentness. "Maybe they won't. They'll hit the cones, and then we'll see."

THEY saw, one after the other, six of the projectiles of death drop out of sight among the white cones.

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But they didn't hear them strike anything! Even duds—which weighed four and five thousand pounds—would have caused the earth to shake under their feet. One bomb, exploding, this close to the group, would have floored every person there, a fact they had overlooked.

But they needn't have worried. The projectiles fell into silence, into nothingness without result! The cones swallowed monster bombs as easily, as surely, as they had swallowed men and bullets.

"Pruett!" cried the Secretary of War. "Look at those two planes! It's suicide!"

For a moment after the falling projectiles had produced no slightest result, the war planes had behaved like frightened birds. Wholesale collision of planes seemed imminent as though pilots had gone mad with the dropping into silence of their cargoes of what should have meant death and annihilation.

Then two crates broke away. They were diving straight for that first cone which had signaled the beginning of the marching white horror on the city of New York. Side by side, their blunt wings shrieking as they sped down at four hundred miles an hour, the two crates held their dive and their terrific speed.

"They're mad—mad!" groaned Secretary of the Navy Logan. "They're sacrificing themselves for nothing! If those bombs won't work—"

"Each of those crates still carries three bombs," said Pruett shortly. "When that cargo hits—" He didn't finish the sentence.

Both crates dived straight at the white cone, near its peak. The high officials instinctively shut their eyes.

The fliers missed the summit of the cone by inches. And as they swooped across they dropped a full cargo of bombs. Nothing happened.

"Maybe," whispered Pruett, "maybe I've got an answer now. You remember, in files of the inventors of thirty years ago, a treatise by Nikola Tesla, wherein he hinted that within a few years the only way a country could be able absolutely to protect itself against attack would be through an invisible, surrounding wall of force? An invisible power that would check anything that touched it?"

Pruett's confreres nodded. One or two also recalled that some efforts had been made by two European countries to work out such a theory—only to find that no electrical power could be developed along Tesla's lines, even along a few miles of frontier, that wouldn't cost billions over and beyond the treasury of the then wealthiest nation.

"But in the laboratories of the nations of the world"—Pruett's voice was shrill with excitement— "scientists have never stopped trying to find the answer to the protection at which Tesla hinted. All scientists recognized Tesla's genius, knew that he himself might have worked it out, had he not flatly stated that he would not give such a weapon to any nation, even his own—and made an end of his experiments."

"What are you driving at, sir?" asked the Lieutenant-general of Marines.

"SIMPLY this: Scientists might have been working secretly since Tesla's time. With the power to isolate nations, a power that might be turned into undreamed-of channels—look, gentlemen, suppose it were possible to solidify, in some material form, a current of electricity? Suppose it were possible, by some mechanical means, to catch a lightning flash in the midst of its greatest demonstration, and solidify it? Suppose it were possible to leash the power.... I have it! I have it! What Liesen was trying to tell us! Suppose the power of the atom, broken asunder, might be harnessed, in tremendous mass, as we have for a century harnessed the power of great waterfalls?"

As though the unseen, unknown enemy had heard his words, six great explosions occurred, simultaneously. The Empire State split from top to bottom. Grey dust from its shattered stones carried away on the breeze. The rest fell into the street with a

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ghastly, ominous rumbling of volcanic sound.

In its place, on the instant, stood the tallest white cone yet to make itself visible to stricken, terrified New York City. The Woolworth Building went at almost the same time.

"Maybe this is the answer," Pruett said in a low voice to the Secretary of War. "Maybe it isn't. But I have a suggestion to make—one more experiment to try. It may mean annihilation for a division of troops. If it isn't the answer, then God have mercy on us!"

"What is in your mind, sir?" said the Secretary of War. "What can I do to help?"

"Marshal your colonels. Give them instructions, carefully synchronizing the time, for a general frontal attack on the cones! I would like, myself, to lead the attack on the cone that stands where stood the Empire State Building!"

"You'll simply become a prisoner."

"I'm looking to numbers to make it stick. There *can't* be vast numbers of human beings inside those cones, even allowing for the miraculous: that it is possible for them to be there, during the very moment of explosion!"

A plan of attack was quickly agreed upon. It was to take place the moment the city went dark, on the first night of the great catastrophe.

CHAPTER IV

Under the Stars

DALE PRUETT sprawled in the dark. His men had surrounded what had once been the Empire State Building. They were awaiting the zero hour to go forward to victory or black destruction.

He cursed himself as he waited. He should have realized, when Liesen and his men spoke out of that first cone, that they had entered it unharmed, and had lived. There were other human beings inside. They could be beaten, even if their instruments of war could not. Or had it been intended for him so to interpret the hint? Was he now going into a trap at the head of his troops?

In five minutes he would know. His troops had gone into position without a sound. There were no cowards among those men. They knew they might be plunging into something that would be like falling into Mauna Loa, but they had agreed without question.

Four minutes — and Pruett's thoughts were still chaotic.

What was the answer to the buildings within buildings?

Were there everywhere cities within cities, absolutely unknown to one another? Was it not possible that people walked this moment right through the exact plane their own bodies displaced, with none the wiser, including the walkers?

If this were possible, was it not possible that on rare occasions, Fate or Nature so endowed some individuals that they were able to pass without hindrance from one plane to the other?

Who knew?

Man guessed so much, knew so little; but might not his guesses be somehow hints from the Infinite which, if he understood them, would set him in the seats of the gods?

Two minutes more and he would be charging to—what?

His heart hammered with excitement. Even if he died for what he was planning to do, his experience would be worth it, for behind him would be others to carry on, and with each annihilation humanity would delve deeper into the unplumbed wells of the Infinite.

One minute to go—

Zero Hour!

Dale Pruett rose, a strange exaltation singing in him, and to his right and left rose his loyal soldiers. They pressed forward. They were armed with small-arms and knives. Each was grimly intent on making an end of the horror, or dying in the attempt.

Then men were closing blindly, savagely, on the strange walls of what had been the Empire State Building. Those walls were a glowing white in

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the eerie light which flooded the city.

Pruett had forgotten the abnormal heat, the winter of abysmal cold, everything save this moment.

The white walls were dead ahead. Soldiers were climbing up the rubble. Before they reached the white walls, though, not even the grimmest commands to remain silent could restrain their natural soldier instincts to go into battle with cries on their lips—cheers for prospective victory. Rising from a thousand throats, such cheers now broke forth.

"Faster! Faster!" shouted Pruett. Enemies inside might hear and somehow prevent entrance.

But if they had heard, the enemy had no time in which to act. Pruett reached the white wall, walked directly ahead as though the wall had not been there—and stopped in amazement.

He was inside the Empire State Building, right enough. He had been inside it before many times, and it seemed no different than it always had! Nothing had changed, apparently, save the outer covering of the great skyscraper. There were even electric lights.

THE great lobby into which he burst with his men was crowded with the enemy. Sinister-looking men, garbed in smart military tunics. All were armed, ready for instant action. They were a strange motley—Americans, Japanese, English, Italians. The "Dictator" appeared to have selected a cross-section from every race in the world. Recruits who would follow him to hell itself in the search for an empire of power.

Pruett's voice rang out.

"Shoot to kill! Take no prisoners!"

Near him one of the enemy was crying out hysterically, giving orders.

"Hold them! Guard the Atomotor!"

Dale Pruett levelled his gun and fired two rapid shots at the man. Golden flame jetted from the gun. Two dark stains appeared on the man's grey tunic. The blood hosed out in little crimson fountains and the enemy soldier plopped to the floor of the hall, dead.

Pruett's men were engaged in grim, deathly combat. Guns barking hollowly inside the strange white cone, glittering trench-knives finding a target and then being withdrawn red with gore, they were fighting desperately in hand-to-hand combat with an unknown horde.

The lobby was a shambles. Under captains and majors, the fight was rising from floor to floor, the new invaders mopping up with savage intensity.

And then Dale Pruett remembered. The soldier he had killed had yelled something about an "Atomotor." Of course! The Atomotor was the fiendish device the Dictator used to achieve that mysterious barrier. A diabolic machine, conceived by a madman's super-science, sending emanations of destruction and cosmic force that could destroy civilization.

Pruett knew he must find that machine. Find it and smash it to ions. And then he must kill the Dictator, the crazed genius who had created it.

But where was the machine? There were hundreds of offices in the building and to comb them all one by one would take valuable time.

One of the enemy came rushing at him, firing from an automatic as he ran. Dale Pruett flung up his pistol and shot for the man's legs. The man toppled, gun clattering on the bloody floor. But the injured man tried to keep going, crawling like a snake with a broken back, toward the stairs.

Pruett stooped over the man on whose pale face was the sweat of agony, in beads as red as his own blood.

"Where is that Atomotor?" demanded Pruett grimly.

"I refuse to tell!"

"Then you're going to *show* me!"

He hooked his elbow under the ankles and wrists of his wounded captive, lifted him, bending his back. The man groaned horribly. His face was contorted, lined with anguish.

"I can't stand it!" he finally gasped. "I'll tell! I'll tell!"

Pruett eased the pressure on the man's back. "What is the Atomotor? How does it work?"

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"It is a motor driven by the unleashed power of atomic energy—containing more power than a hundred Niagaras."

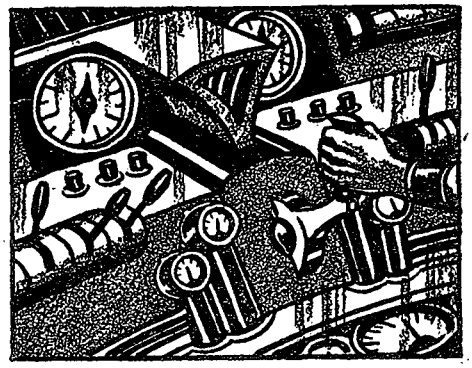
"What does it do?" Pruett went on, twisting the prisoner's arm once more.

"I can't tell. He'll kill me!" the man gasped in a tortured breath.

"I'll kill you if you don't—*now!* What does it do?"

"It—it controls the *etheric flow—*"

"And the light I saw this morning, early, shooting into the sky over the Dorgan Building?"



"Was a signal to our comrades in other buildings throughout the city that the attack was to begin." The prisoner was breathing heavily, his breath was coming in short, spasmodic gasps.

Pruett realized that the man might pass out any moment now.

"The Dictator!" he demanded quickly. "Where is he?"

"The Dorgan Building—fourteenth floor."

Pruett had not been a second too soon.

The fellow slumped down into unconsciousness.

CHAPTER V

The Etheric Flow

AS he raced toward the entrance of the building, once again being able mysteriously to go through that impenetrable barrier, darting madly toward the Dorgan Building, Dale's thoughts were a chaotic vortex. The power of the atom, after it had been successfully smashed, and the power leashed, turned to villainous use instead of to human needs! Scientists had long speculated on that. Since the atom was known to man.

Power beyond conception, within the atom, too infinitesimal ever to be seen! Yet when unleashed, a force that could destroy the world. The etheric flow—just words to indicate something man did not understand—unless the scientist back of this horror had grasped the secret. Ether was supposed to be something, nobody knew exactly what, which was in everything, outer space, throughout the galaxies of the Universe, flowing in all directions at once. And it could not be defined.

Nothing could stop it. It flowed through any metal as though the metal were non-existent. It flowed through man, through his every cell, through the vastness of space, through all the celestial bodies. But what catastrophe might result if some power could control the flow? Pruett knew now the answer to the extreme weathers that had troubled the world—the blistering summers and the sub-zero winters. The Dictator had in all probability experimented with the etheric flow, learning by trial and error, with a world of men for guinea pigs.

Perhaps he might even have disrupted the Heaviside Layer, that unknown band of force in Earth's stratosphere and which science claims even radio waves cannot penetrate. Who knew but that the Heaviside Layer acted as a sort of weather filter?

Pruett's mind churned with the problem as he ran down deserted Fifth Avenue. Tripping, stumbling over the high-piled débris from the exploded buildings, he ran on breathlessly, stopping only once to tell a patrolling soldier to pass the word on that the Dictator was in the Dorgan Building.

At last he came up to the great white cone which had once been the

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Dorgan Building. He entered with no hesitation this time, wondering only why he could go through and why bombs dropped from miles above had no effect.

Uniformed enemy soldiers were in the lobby, keeping watch. Pruett fired quickly, accurately, and before they could recover from the surprise attack he was heading for the stairs, leaping up the steps three at a time, a gun in each hand. Below him enemy soldiers were shouting, running in wild confusion.

With almost superhuman energy he kept mounting the stairs, bridging floor after floor. When at last he reached the fourteenth, he leaned momentarily against the wall, his breath coming in giant sobs.

A faint, resounding hum, dynamo-like in nature, was coming from the office in the left corridor. This must be the Dictator's headquarters—the laboratory where the first Atomotor had been unleashed.

Quietly, cautious less he warn the Dictator that his stronghold had been invaded, Pruett crept along the wall, moving toward the laboratory.

The door was open. A strange spectacle met his view. In the middle of the room was a huge coppery cylinder, a maze of complex wires, tubings and scientific paraphernalia leading from it to an adjacent motor. Had it not been for the wires, Dale could have lifted the motor itself with one hand. It looked like a neat, compact model of a Diesel engine.

DIAGONALLY across the room, a dozen telephones before him, a man was barking into the transmitters.

"So they're coming up the Dorgan Building to get me? Stand by. I'm going to broadcast an ultimatum—either they cease all attack or I blow the whole of New York to atoms! All I have to do is pull a switch at my side—" Suddenly the man wheeled, sensing an intruder in the room.

The Dictator was short, squat. Unlike the uniforms of the others, his tunic was red. His eyes glinted like ingots of molten metal. A barbarous black beard contrasted gleaming white teeth. It was difficult to guess his nationality. His features were polyglot.

Pruett had him covered with both guns. "Stay away from that switch," he cried, "or I'll let you have it!"

The Dictator grinned, a futile, beaten grin. Swift as light one hand darted for the switch. He moved with blurring speed, before the act registered with Pruett.

"Unless you drop both guns," the Dictator said evenly, "I'll close the switch right now!"

Pruett let drop his hands, but still held on to the guns. Would the Dictator be the fatalistic type to close the switch, taking the city with him, knowing that all was lost? He must stall for time, Pruett thought swiftly. Help would come soon. He feigned astounded interest.

"Tell me how your ether flow functions," he asked. He must feed the man's vanity, bloat his ego—get him away from that switch!

The Dictator jerked his head sharply, bushy black beard bobbing up. "Etheric flow? Then you know about it?"

"A little. You must be a genius to have analyzed it and adapted its potentialities for control." Pruett flattered with subtlety. He must make the man forget about that *switch!*

The Dictator loosened up. "My invention—" he muttered. "The Atomotor is on now. Turn it off and in a split second this white building would be gone. In its place would be the skeleton of the Dorgan Building. In order to control the etheric flow, we must keep a constant, firm grip on it. That's simple, for the power of the atom is limitless, inexhaustible, and its motor does not run down. The power in these Atomotors has been adapted to current situations. That is it can be sent out through the simple electric wires which lighted this building, which still light them—despite the fact that the rest of the city, save in the other cones, is dark."

Pruett interrupted, feeding the man oily praise. "Heavens, man, you've revolutionized the science of physics!

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Tell me more about the Atomotor."

The madman chuckled in a gust of fiendish laughter.

"You think you can talk to me, divert my attention, and kill me? I'm too clever for you. I've got one hand on this switch, and at your first move I'll close it. This is a master switch, controlling the atomic energy in all the Atomotors in the city. They have been normally regulated to control the etheric flow—but with the throwing of this switch, the atomic energy in them will be released in full force. The city will be blasted to bits.

"I KNOW you'll never get away from here. So you might as well realize what a genius I am. The power of the atom is sent out over the wires which light this building, the main conduits of which are, or were, imbedded in the walls. The instant the button, after the connection was made, was turned to 'On,' the entire building became, shall we term it 'atomized'? It happens to be the truth. And in between the wires, no matter in what direction they ran, or how far apart they were, a field of force was set up—through which nothing, not even ether, could pass! Do you understand?"

Dale Pruett took a deep breath. Slowly, imperceptibly, he was edging nearer and nearer the Atomotor.

"I think so," he answered. "Hitherto ether has flowed through time and space and eternity with nothing whatever to stop or even slow its flow. Now, this field of force, built up by the atom—or howsoever many of them may be harnessed in one Atomotor!—suddenly stops that flow. I get that. The ether piles up against the field of force which, roughly, follows the outline of the building. The ether passes through the walls of the building, as always, and continues to pile up until it can no longer occupy the same space as the walls of the building! Then—the walls collapse. It happens so swiftly that the walls actually explode! And we see a new building in place of the old, in the batting of an eye! It looks to be white—"

"Because," interrupted the Dictator, "it is totally lacking in color of any shade whatsoever—"

"And by turning that one button to 'Off,' you can allow the ether to flow on—and the white building disappears, is that it?"

"Yes—"

"What man can imagine, man can do," said Pruett softly. "I'd give my soul if this discovery had been mine. But how is it that men can march straight through walls, but that bullets and inanimate things cannot?"

The Dictator sighed. "That's as simple as the rest of it. On striking the white wall, anything—*any thing*, you understand—is instantly rendered absolutely motionless. You know, there is a fraction of a second when a spinning wheel, in contact with the ground, is motionless? Any inanimate thing that strikes the white wall is also motionless, and cannot move of itself. Man can move of himself. Machinery cannot. Bullets cannot."

"But the bullets left no marks! Neither did the bombs."

"They were absorbed by the white walls. If you could see a bullet, in slow motion, penetrate the white wall, you would see it become shorter and shorter as it penetrated, until it vanished; or was 'swallowed.' The part that touched the wall was motionless. The part still in motion, continued in motion, until it disappeared. Bullets or bombs, they were imprisoned in the outer barrier. Think of the barrier as a jellylike substance. Anything falling into the jelly becomes motionless.

But animate objects, like men, because they have the motive power within themselves to do so, can move through the barrier after their first initial action has been arrested. The bombs may have exploded within the barrier, but their effect was nil. And now I've told you enough, my friend. I'm going to pull that switch!"

SUDDENLY a sharp, whiplike report sounded in the laboratory. The Dictator fell to the floor, a bluish hole in his forehead. Pruett spun around. There, in the doorway, stood

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good old Colonel Liesen, of the good old Marines, smoking gun in hand!

"COLONEL LIESEN reporting, sir!" he saluted. "The Dictator had me prisoner in the building across the way. There's an underground passage between this building and that one. I heard his men talking, knew that the Dictator was here, and decided to come here and kill him. You almost beat me to it!"

Pruett walked over quietly to the dead scientist. "A great genius that man must have been," he said. "But some queer quirk of his mind warped that genius, perverted it. He wanted to be master of the world. He must have spent his lifetime planning this, organizing secret recruits from all over the world, renting office space in all the skyscrapers so that he could install his Atomotors. Suppose he had ever perfected his invention to the point where even human beings could not penetrate the barrier—" Pruett sighed, walked over to the switch on the wall and tore it from its socket.

He could not see what was happening on the outside of the Dorgan Building, nor on the outside of the other conelike structures. But simultaneously with his yanking out of that master switch, and the ceasing of the harnessed etheric flow, the white cones disappeared instantaneously. Only gaunt, skeleton frames of the original buildings remained. There would be much reconstruction work to be done in New York City—*after* the American soldiers finished mopping up the Dictator's rabble "army," and a frightened citizenry should trail tremblingly back to their all but devastated city.

The reign of the Dictator was finished — the menace of the Atomotor over—its secret gone with its diabolically clever inventor.

Dale Pruett smiled wanly as his eyes locked with those of the colonel. Then he slumped down into the nearest chair. The first Secretary of Military Science was very tired.

FORECAST for the NEXT ISSUE

FOR the next issue of THRILLING WONDER STORIES we've hand-picked splendid stories by a list of all-star writers for your entertainment. The most unusual treat in the next number is the *last* story by STANLEY G. WEINBAUM, which we've been fortunate enough to secure! It's called THE BRINK OF INFINITY, and is a tremendously absorbing story of higher mathematics applied to a gripping game of life and death. It's something brand-new in science fiction.

* * * *

ARTHUR LEO ZAGAT will be represented by a tense, dramatic novelette of a physicist years ahead of his time. This novelette, THE LANSON SCREEN, will hold you in suspense throughout . . . the absorbing story of a man who played with cosmic forces, with generations of human lives, making guinea pigs of men.

* * * *

JOHN W. CAMPBELL, JR.'s first novelette for the new THRILLING WONDER STORIES is a masterpiece of science fiction. His yarn, THE BRAIN-STEALERS OF MARS, presents a new conception of interplanetary life. It's a thought-provoking tale of an astounding form of existence on another planet . . . the strange story of the *thushol*.

* * * *

EDMOND HAMILTON'S novelette, MUTINY ON EUROPA, is a vivid tale of the hardships of Earthmen in conquering the spaceways.

* * * *

All these, and other stories by favorite writers in the science fiction field, are scheduled for the next issue. In addition, another batch of SCIENTIFACTS: the future science strip, ZARNAK, and other features.

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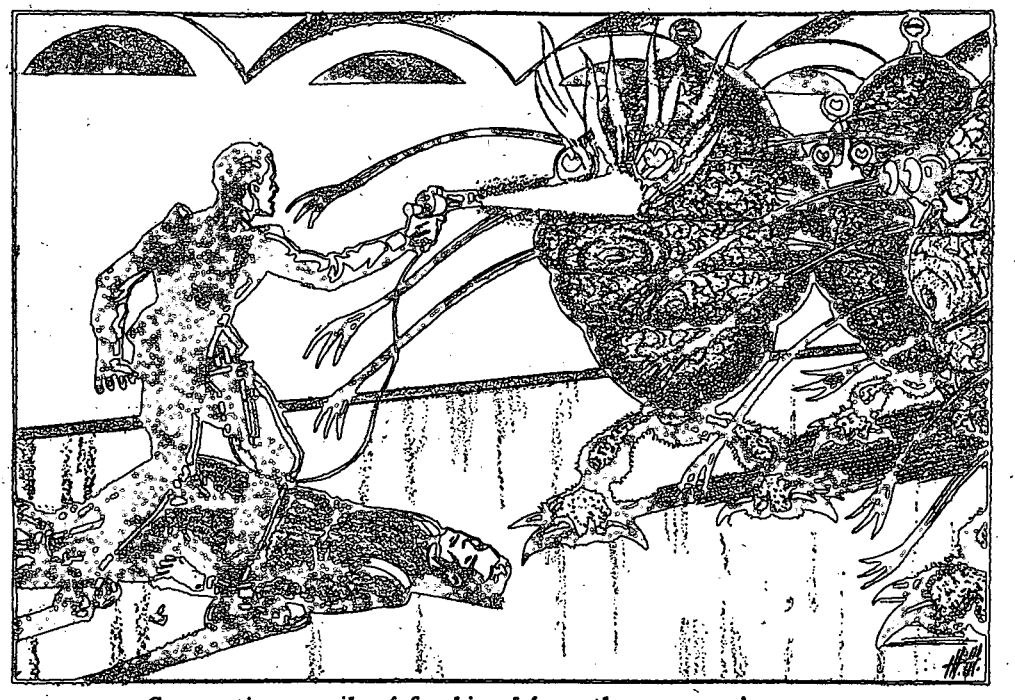
Humanity is Menaced by an Insidious, Sentient Life-Force on the Satellite Deimos!



Coruscating pencils of fire hissed from the spaceman's weapon

CRYSTALS of MADNESS

By D. L. JAMES

Author of "Cosmo Trap," etc.

THOSE hours of waiting, while the little moon of Mars drew near from out of the immensity of space, were hours of intense strain for Bruce Collins, crack pilot of G-rockets. Forty million miles behind him men of Earth struggled in the grip of a strange paranoia—madness which they vainly tried to combat with the newly discovered anti-telepathic serum.

It was good to have Red along on this strange crusade. Larry Gillmore was a man who could be depended upon in a pinch—a little reckless and headstrong in certain ways, but possessed of a daring and initiative which would be likely to prove invaluable when danger threatened.

And just what sort of danger, other than madness, was to be anticipated from this obscure power radiating from Deimos, moon of Mars, to Earth across forty million miles of space?

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What was this enigmatic menace that sapped the minds of men and twisted their bodies into strangely distorted shapes?

Underneath them, emerging from the frightful, star-dusted depths of infinity, the tiny disc of Deimos swelled like a toy balloon. How absurd it would have seemed to astronomers of a century ago to have accredited such a tiny satellite with a breathable atmosphere. To old-time physicists the kinetic theory of gases had seemed to prove that a small planet couldn't hold onto an atmosphere.

They hadn't known that the molecular speed of a gas was dependent upon the strength of the gravitational field in which the molecule moved.

With jets blasting downward in a braking effect, Bruce lowered the silvery G-rocket to the rocky surface of Deimos, just in the edge of twilight, near the foot of a fantastically tilted cliff.

Larry's voice broke the sudden stillness:

"Took your shot of serum?" he asked.

HE was gazing warily out through the glass ports at the disturbingly lurid locale.

"Sure," answered Bruce, his grey eyes intent, his lean face bronzed from exposure to the searing light of outer spaces. "How about you?"

"O.K.," said Larry.

"Well, let's strap these static pads over our shoes and take a look around—there's not gravity enough here for walking without them."

Five minutes later they were standing outside the rocket, with Mars hanging like a big crescent moon near the abnormally low horizon, bathing their rough environs in a red-tinged glow.

"What now?" Larry's eyes were eager. "Scout around until we find Horker's laboratory?"

"Not exactly. Our instructions are specific—destroy Deimos. Horker probably built up some sort of place here in which to carry on his experiments with those pebbles from Patagonia, but we might search for a hundred hours without finding it here."

"It's over there," stated Larry calmly, waving his arm down a talus slope of loose stones.

Bruce's eyes narrowed. A half mile away the talus seemed to dip into a mist-hung crater or gully.

"Why?" he snapped. "What makes you think so?"

"Just a hunch—and you'll find I'm right."

Bruce regarded his co-pilot suspiciously.

"Listen, you! Take another shot of that dope. Get me?"

"Who, me?" Disgust was in the red-haired spaceman's voice, but as their eyes met his hand reached for the pocket case. "O.K.," he grinned. "Think I'm touched, eh?"

Bruce watched him fill the small cylinder with serum and screw on the needle.

"No," he said. "I guess you're no more locoed than usual, but we're not taking any chances. I'll start getting out the cone apparatus."

He re-entered the rocket, switching on the light in the after compartment, and proceeded to unpack the hastily stored conglomeration.

Ten minutes later, when he emerged from the rocket, Larry had disappeared!

It was an odd sequence of events which had caused these two spacemen to be sent to destroy the tiny outer moon of Mars to save Earth from madness. Horker, a physicist of Earth, was at the bottom of it. Somehow he had discovered that certain pebbles in Patagonia—pebbles which had puzzled geologists since Darwin's time—were dormant forms of alien and inconceivably ancient life.

Stopped by order of a world tribunal from continuing this line of inquiry because it was deemed too dangerous to humanity, Horker had fled to Deimos to continue his research, taking some of the pebbles with him.

Two years passed. Then, suddenly, men went mad. No one knew why until Horker returned to Earth in his private rocket. He was mad as a hatter, his body strangely altered, and he babbled of some inhuman,

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sentient life, neither animal nor vegetable, which he had liberated from a pebble on Deimos—something that must be destroyed. Something that through its telepathic power could control the bodies and minds of men across millions of miles of space. There appeared to be some abnormal shifting and extension of certain of his anatomical parts.

And now, only a few minutes after the arrival on Deimos of the two spacemen who had been chosen for this vital mission, Larry Gillmore, co-pilot, was mysteriously absent.

For a moment Bruce stood in frozen dismay. Silence and shadows hemmed him in, the ruddy Mars-shine touching the crumbling cliffs and crags with blood.

By what strange, recondite power had Larry been snatched so stealthily away?

Bruce cursed as the answer flashed suddenly to him. What a fool he had been! Distinctly he recalled that on no occasion had he actually seen Larry jab the needle into his arm and shoot home the plunger. Wasn't it exactly like the headstrong, self-willed spaceman to feel that he needed no such protection as the anti-telepathic serum?

And what about that "hunch" of Larry's? Might that not have really been only an insidious hallucination, fraught with madness, twisting his brain with mephitic fingers?

"Larry!"

The call sounded weak and futile in that thin air. He called again, louder: "Red! Yo-ho. Re-e-ed!"

There was no answer. In the moment that followed, Bruce imagined that he could almost feel the dizzy wheeling of that small satellite under his feet, as it silently pursued its endless spiraling through space.

He must find Larry. His eyes circled the low-hung, misty horizon. But if he left the rocket unguarded—

With the sudden realization that on his shoulders, alone, rested the duty of saving humanity from a fate that might well be worse than total annihilation, Bruce commenced with frantic haste to assemble the apparatus he had hauled from the rocket.

BUT first, he carried the parts, one by one, for a distance of perhaps three hundred yards from the rocket, selecting an expanse of smooth, level rock for his contemplated operations. Then, before he actually commenced work on the cone projector, he withdrew a short range weapon from a holster at his hip—a pulverizer pistol, capable of reversing the molecular force of cohesion in any organic body—and made sure that it was ready for instant use.

It was an odd instrument, that retarding ray projector, on which mankind's last thin dime was staked. The thing consisted, mainly, of a sectional mirror of paraboloid figuration, with a microwave exciter hung at its focus. This reflector was capable of throwing an enormously extended, invisible beam in the shape of a cone with the mirror at its apex. This beam, colliding with light waves or photons, produced an infinitesimal retarding effect, similar to a lens, thus refracting the light waves toward the axis of the cone.

Light entering this invisible cone would conform to it exactly as water entering a funnel. Although never fully tried out, the devilish possibilities of the thing lay in the fact that it could be focused to cover any incandescent body of however great extent—the sun, for instance. And in that case the results should be similar to those attainable with a Gargantuan burning glass of a size sufficient to cover the sun's disc.

Working with a speed and determination that soon caused drops of sweat to trickle down his bronzed face, Bruce struggled with the thing far into the night, while the thin, red crescent of Mars waxed wider and wider until it became like a full, ruddy moon. But it still retained its place, floating low on the horizon, for Deimos, moon of Mars, kept always the same face toward his primary.

There was plenty of light to enable Bruce to work effectively even though it was night on Deimos; for, due to refraction of sunlight around

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that small globe, the night was but a sort of pearly twilight, touched with blood by the oblique Mars-shine.

Bruce was more or less familiar with the scanty vegetation and animal life among the rocks nearby. Years before, he had piloted an exploration party from Earth, consisting of four eminent men of science, which had spent some time in studying this tiny moon.

After several busy hours, Bruce stole a few minutes to search the pitted face of the cliff near which he was working. There was nothing to fear from these aboriginal dwellers of Deimos, as he was well aware, for he remembered them as inoffensive, sessile-eyed, snail-footed Arachnida, only a few inches tall. But he was wondering if this strange, unknown thing which Horker had hatched from his pebbles had affected them in any visible manner.

Although small, sluggish creatures, these Arachnida, he remembered, possessed an intelligence considerably higher than that of any animal of Earth—a quaint, semi-human intelligence, which enabled them to use certain primitive tools.

And now, here in the shallow niches of the cliff, he found their tiny, conical, adobe huts. His eyes traced the small terraces lying before the huts, filled with dark loam which the industrious Arachnida had carefully collected from the scanty supply available.

But these small gardens were neglected, the tiny huts abandoned. Not an Arachnida did he find, although he searched for several hundred feet along the cliff.

HAD they fled, wisely, from this menace which stalked with giant strides over their too-small world? Or had they succumbed, been swallowed up or enmeshed, somehow, in this brain-twisting thing released upon them by Horker from the dark ages of Earth's past?

With a sickening sense of futility, Bruce returned to his task. The stillness became oppressive. It was hard to keep his mind centered, and he would now and then find himself gazing warily down the talus. How was Red making out? Well, anything could have happened to him by now—anything! Bruce tried to blame himself for this delay. But what else could he have done?

At last the machine was ready. Bruce adjusted it, with the wide mirror facing the sky, close down to the horizon.

In the natural anticipation of events, dawn should presently creep along that horizon. Then the sun would rise, sweep upward into the field of the mirror. Nothing would happen for twelve minutes thereafter—it would take that long for the scooped-up rays of light and heat to reach Deimos. Of course the machine would disintegrate at the first touch, but that wouldn't matter—the heat would blast away for twelve minutes longer.

Bruce threw in the time switch. He had set it to kick the current over into the wave oscillator at dawn.

Now he could go on with his search for Red. Whether or not he returned wouldn't matter—the machine would function without further attention.

But if he found Red—alive—and could get him back to the rocket before dawn . . .

Bruce swung off, down the talus slope, his eyes striving to pierce the mist ahead. It wouldn't be dawn for some time, for nights on Deimos were long—fifteen hours.

Despite his cautious advance, the stones clattered harshly underfoot, sliding for yards around, and sometimes rising, weightless as feathers, to drift before his eyes. There was the disturbing sense that, should he leap upward, he would leave Deimos forever.

For a quarter of a mile he kept steadily on, while the talus narrowed between upjutting, rocky pinnacles.

Suddenly he froze, eyes leveled straight ahead. Something moving on the dim crest of a ridge beyond the gully! An indistinct form, larger than a man—vague, shapeless—too large for anything on Deimos. Abruptly it was gone.

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Then a gleam as of light on polished metal caught his eye. It came from the rubble underfoot. He stooped, reached down. Sick at heart, he picked the thing up.

Red's pocket kit of serum!

Bruce felt, now, that his sinister apprehensions in regard to Red were justified. Only incipient madness could have caused the level-headed spaceman to cast the box away.

A rising mist from the gully ahead somehow suggested smoke. Then, as Bruce advanced, a small, moving object a few yards away caught his attention.

An Arachnida! The first he had seen.

Bruce drew closer. Why didn't it try to run away? From past experience, Bruce knew these litle creatures to be habitually shy and timid in the near presence of man. This one paid absolutely no attention to him.

For a moment he watched it as it forged steadily ahead, as if in answer to some urgent summons, down the talus. Was it drawn by that same invisible force which had overpowered Red?

Muttering a curse, Bruce strode on. Now the talus dipped into a narrow gorge which opened like a doorway onto the level floor of the gully.

Ah-h-h-h!

His hand wrapping frenziedly around the butt of his pistol, Bruce dodged behind a providential spur of outjutting rock—to peer forth with cringing eyes at the dreadfulness of what he saw.

For the place was alive with moving monsters, abstruse organisms, of a kind that man should not see. Sights which made one shudder repulsively.

As tall as men, but of such bloated girth and bulk that Bruce felt suddenly like a pygmy, they were wandering here and there over the floor of the gully, as if gathering something from the rocks. Here, then, were Horker's pebble-people! And, as one blundered near his hiding place on thick, jointed legs articulated to the lower segment of its squat body, Bruce had ample opportunity to observe it closely.

ITS bloated body was composed of a series of distinct, horizontal rings or segments, each segment provided with a pair of unjointed, flexible feelers. There was no distinct head. From the third segment, counting downward, grew a pair of eye stalks; and on the fourth segment was a queer circinate formation, which might serve either as olfactory or auditory equipage. Bruce saw no organ which suggested a mouth, but from the top segment grew a sort of pedicle or antenna, terminating in a round, bulbous knob.

But it was not the distinctly nauseous aspect of the thing that rendered it most singularly abhorrent, for Bruce was used to the strange planetary fauna of other worlds than Earth, although its appearance was sufficiently disgusting.

Where on this tiny satellite had they found the nutriment to grow such fat, squat bodies?

Bruce, his eyes darting from one to another of these grotesque monsters, saw that no two of them were alike. Some had a greater or less number of segments and appendages—others more than two eye stalks. Thin plates of horny, chitinlike deposit seemed to armor certain specimens, although the one nearest him was entirely bare—but each was provided with that bulb-tipped pedicle.

Incongruous and unpleasant as was the spectacle occasioned by this utter unconformity to a set system of development, the real foundation of the spaceman's heart-sickness and loathing lay still deeper. He wasn't sure yet, but—

Bruce allowed his eyes to shrink away, to roam over the gully.

Horker's laboratory!

The gully was perhaps a quarter of a mile wide, and in the center of this grottolike basin stood a long, rough building of stone. So, Red had been right in that "hunch" of his.

Near the building was a rounded, domelike structure, apparently of baked clay, with an aperture near the top from which came puffs of greenish, phosphorescent smoke; and on a level expanse of the gully's floor be-

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yond the furnace—if it was a furnace—a hundred foot circle was outlined with a low wall of piled rock.

Horker had undoubtedly constructed this rough building—might be responsible for the furnace—but that vaguely suggestive and disturbing circular wall bore the aspect of nothing human.

With the pulverizer pistol in his hand, Bruce stepped out from behind the rocks. He was expecting a rush from these monsters.

Nothing of the sort happened. Only their waving eye-stalks indicated that they were aware of him, but they seemed to sense no threat in his presence.

Did the anti-telepathic serum work both ways? Did they trust implicitly in their powers of metapsychosis—their ability to read thoughts?

Hoping that such was the case, Bruce walked in among them toward the building, which was perhaps two hundred yards distant.

Now, striding close between two of these monsters, a terrible comprehension assailed him. Something in the flesh texture of these slimy, skinless things gave him an answer to his question of their origin. For, in vague patterns on those swelling surfaces were distorted, yet unmistakable designs—familiar outlines. Patterns that could be nothing other than the twisted, crushed bodies of Arachnida!

TO Bruce, now, it was only too apparent that these monsters had not formed through the embodiment of any natural organic, or animal-like, growth.

Although built of flesh they were not animals.

They were complete structures—assemblies! They were quasi-bodied monstrosities, built of hundreds of small pieces — modified, united, coalesced and welded, in consequence of some peculiarly blasphemous travesty of nature. In a flash of understanding Bruce knew what these monsters were gathering from the rocks—knew what had become of the Arachnida. For each piece in these horrid structures was an Arachnida—still living, although no longer a separately conscious entity.

Thus, on a small world, peopled by tiny, defenseless creatures, these monsters had built themselves up. Had not the same thing started on Earth, years before, among the wild cattle, the guanacos of Patagonia?

He must find Red!

Bruce strode on to the open door of the building. The place was a busy workshop. This laboratory of Horker's was larger than it had looked to be from across the gully. Just within the wide doorway a dozen pebble monsters were working over a basket-like structure of metal. Bruce saw a queer, intricate mechanism attached to the top of this structure, which, despite its open appearance, somehow suggested that it was intended for a space ship—although fashioned along some enigmatic principle utterly foreign to anything he had ever seen.

Further on, along the back wall of this big, rough place, was a group of three other monsters bending over something on the floor.

Grasping his pulverizer pistol, and shrinking in every cell of his body from a closer contact with these multi-shaped abnormalities, Bruce walked into the room.

Again their extended, pointing eye-stalks indicated their consciousness of his arrival.

Larry Gillmore! A strangely immobile and silent Larry. He was stretched out on the floor, his eyes open, but with a look in them which indicated past all doubt that his brains had ceased to function.

The three pebble-monsters drew back as Bruce advanced. Probably they were aware of and puzzled over their lack of control over him.

"Red!" he gasped, bending over the lax form.

There was no response. Then Bruce noticed a faceted, crystalline nodule, the size of a small orange, around which the tanned fingers of the unconscious spaceman's hand were gripped. And on top of this came the almost paralyzing conviction that, before his very eyes, a subtle change or atrophy was taking place in those

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fingers that were clutching the nodule.

Heavens! Was the hand really beginning to look like one of those bulb-tipped pedicles?

Whipping out his hypodermic needle, Bruce filled it; then, with a violent kick, he dislodged the malignant object from Larry's hand.

A second later he had shot home a tremendous dose of serum into the bared arm. But now the pebble-people seemed to awake to the fact that all was not right. Suddenly they rushed forward.

Bruce jerked erect, the cool grip of the pulverizer pistol settling reassuringly into his palm. And in that same split-second, he saw one of the monsters snatch up the crystalline nodule, open the bulb-tipped pedicle which sprouted from its upper segment, and place the loathsome object within the confines of its no less abhorrent self.

On they came. Coruscating pencils of fire hissed from the spaceman's weapon. And where it touched the monsters, lambent flames raced and spread as they spattered into nothingness, filling the room with a vile, noisome and unbreathable vapor, and from the midst of each drop a crystalline nodule, still intact.

PATAGONIAN pebbles! Bruce guessed what the things were. But they must have undergone some obscure metamorphic rebirth, some chemical dissolution with subsequent reformation or recrystallization, for their lines were clean cut, their facets polished and faultless.

The three monsters who had been gathered around Larry were thus accounted for, but now the atmosphere was too thick to allow Bruce to see if the others were approaching.

Gasping for breath in that vile air, he dragged Larry toward the doorway; and as he did so, a sound, a single musical note like the twang of a harp, beat upon his ears.

Was it a danger signal? A call to arms?

Again it came: *Twang — twang — twang . . .*

Now he dragged Larry out through the door where it was easier to breathe.

Bruce saw that things had been happening, there in that pearly, red-laced twilight, while he had been inside the building; for now the space within the confines of that circular wall of rock was occupied.

Here hung a kaleidoscopic thing which set his senses reeling. A shimmering, colossal polyhedron of a thousand scintillating facets, an indescribable, unstable thing, twanging tremulously in measured cadence.

And from the rocky floor of the gully, from far and near, Bruce saw the pebble monsters assembling, as if drawn by some omnipotent command, around that hundred foot circular wall.

Now was the time to get away! Bruce whirled back to Larry, to find the latter's eyes, suddenly sane, staring at him.

"Thank Heaven!" he gasped.

He jerked the lanky spaceman to his feet.

"Come along, you!" he gritted.

Unmolested, they slunk away in that pearly, half light, across the floor of the gully toward the talus slope.

And as they fled from the near proximity of that towering thing within the circle of rocks, Bruce sensed that he was fleeing from something he could not understand—did not want to understand.

Yet, despite this mind weariness, as he saw these pseudo-bodied monsters assembling around the wall, a vague, unwelcome comprehension sickened him. If they would only continue to be thus occupied!

Reaching the rocket in safety, a half hour later, the two spacemen blasted away from that accursed moon of Mars. Now, hanging in space a few thousand miles from Deimos, with jets silent, they were waiting for results.

Larry was in a repentant mood.

"Guess I pulled a damned fool stunt," he remarked, looking at his twisted hand. He had, in fact, been examining it for some time past. Now, true to his nature, he grinned, broadly. "A *little more* and I'd be holding a tin cup on a street corner."

"Wrong." Bruce was watching

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Deimos through one of the ports. "You'd have been built into a first-class pebble man—a handling machine for a little crystalline brain to operate, a brain that can outthink any living man or animal.'"

Bruce continued his watch through the port. Dawn must now have whitened that blood-tinged horizon. Soon he would know if his efforts were to be in vain.

SUDDENLY the little disc of Deimos glowed white with the incandescence of lime in an oxyhydrogen flame. Then, slowly, this brilliant dot puffed up to a thousand times its previous size, like a star from a Roman candle, a glowing, gaseous Nova.

"All over," reported Larry, who had been watching intently from another port.

Bruce turned to the control bar, throwing the blast full open.

"That thing"—Larry hesitated—"I mean the thing within that circle of rocks—what was it?"

"I don't know," confessed Bruce.

"But—where did it come from?"

"Out of space—somewhere. It wasn't there when I entered the gully."

"Was it a space ship, do you think?" insisted Larry.

"No, I don't think so. They were building one of their own. That's why the furnace was smoking."

"Going to blast back to Patagonia, I'll bet you." Larry's eyes were thoughtful. "Well, it's just too bad now."

"Somehow, I hated to do it," mused Bruce, "but those things and men couldn't possibly exist in the same universe."

"Were they alive—those crystals—do you think?"

"I don't know. Half alive, maybe—but possessing a still, cold intelligence that could mold and fashion living things into exactly the form they wished, through the power of sheer thought."

"I—er—got a queer impression about that other thing—the thing that came. I wonder why it came."

"They were expecting something to come, for they had prepared a place for it. I imagine they had called it—called it out of space—out of the past, maybe—and it came. That's all."

Bruce ceased speaking, and for a moment there was silence between them as they listened to the screaming blast from the rocket's jets, hurling them homeward, away from that weird place of unbelievable monstrosities.

Presently, with a thoughtful look in his grey eyes, Bruce asked: "What was that impression you mentioned?"

"Why, it seemed to me," explained the red-haired spaceman, "when they gathered in a circle around that thing within the wall, that they were—er—praying."

"Strange," mused Bruce, "I thought so, too."

WHAT IS YOUR SCIENCE KNOWLEDGE?

Test Yourself by This Questionnaire

1. What is the Heaviside Layer?
2. What is a filterable virus?
3. In which metals is transmutation always automatically taking place?
4. What is metapsychosis?
5. Where would substance weigh a ton to the cubic inch?
6. What have Orion, Regulus and Aldebaran in common?
7. The protoplasmic structures of organisms on Earth are based primarily on what?
8. Does Sirius have any planets?
9. Name one galaxy having a spiral star cloud.

(A Guide to the Answers Will Be Found on Page 121)

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THE STORY BEHIND THE STORY

THERE'S always a story behind the story! Never has that axiom been more true than when applied to science fiction, a variety of literature which demands freshness of theme, originality and accuracy of ideas.

Of course, imagination plays a prominent part in the creation of a pseudo-scientific story, but the veteran writer looks to varied and multiple sources for the nucleus of his plot. We've asked the authors of the novelettes in this issue to tell THRILLING WONDER STORIES readers how they actually came to write their yarns. First, RALPH MILNE FARLEY, the popular author of the famous "Radio" novels, takes us behind the scenes and tells us in straight-from-the-shoulder fashion the genesis of his fine novelette, LIQUID LIFE. Here's what he has to say:

Early this year I read a news item which stated that some scientist had at last determined the nature of filterable viruses (as described in the story). At once it occurred to me: here is a form of life, a real form of life, which never before has been made the theme of a science fiction story.

But how could liquid life communicate with human beings? And how could it move around and become a menace? I searched through my scrapbook of scientific clippings and found the recent cat-brain experiments (also described in my story); this solved the first question. As to the second, I merely gave my imagination free rein and assumed that the virus with its superhuman mentality, would attempt to force itself up the scale of evolution and become amoeboid.

Voilà! The scientific basis for my story. The story itself evolved automatically, against this background, from the clash of the personalities of a normal square-shooting fellow (Dee), a fanatic altruist (Zenoff), and a selfish money-worshiper (Schmidt).

RAIDERS FROM SPACE

The painting on this month's cover is based on a scene from MAN-JEWELS FOR XOTHAR, a story of raiders from space by HAL K. WELLS. The story has an unusual theme, and here's the author's own explanation of how the idea developed:

The original idea that prompted my writing the yarn was that of interstellar invaders to whom our Earth, with all its vaunted science and civilization, would be of interest only because it happened to be a variety of cosmic oyster bed. To such interstellar visitors there would be no practical difference between a Ph. D. and a Maori savage. Both would be merely primitive animal organisms bearing source-material for the jewels sought by the invaders. To add to the idea of the utter insignificance of the Earth to a really advanced race from beyond the solar system, I had the invaders arrive here not because of any elaborately conceived plan, but simply because a drunken navigator of a third-rate pearler blundered far enough off his course to stumble

(Concluded on Page 128)

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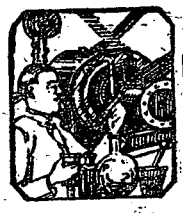

Science Questions and Answers

THIS department is conducted for the benefit of readers who have pertinent queries on modern scientific facts. As space is limited, we cannot undertake to answer more than three questions for each letter. The flood of correspondence received makes it impractical, also, to promise an immediate answer in every case. However, questions of general interest will receive careful attention.

CRYSTALLINE LIFE

Editor, Science Questions and Answers:

I think your Science Questions and Answers Department is very educational. I have always read it, but I have not seen this question asked: Is it possible for a mineral form of life to exist? Many science fiction authors have used the idea of a crystalline form of life, but is there any scientific basis for this conception?

CLIFFORD WILLIAMS,
3847 N. Francisco Ave.,
Chicago, Ill.

The true form of crystalline or mineral life would be of creatures whose entire body was made up of siliceous and calcerous mineral plasm. Science has no record of such a silico-calcic life, but it is not impossible. Such a form of life would evolve only in conditions of extreme heat. It is possible that on other worlds, Mercury, for instance, where the surface temperature is that of molten lead, there exists these mineral creatures. The chemistry of these mineral beings would be simply a replacement of carbon atoms by those of silicon. These two elements are in the same group in the Periodic Table, have the same valence, and are both capable of acting on a base or acid. In a great many carbon compounds, the carbon atoms may be replaced by silicon atoms. For example, methane CH_4, may be converted to SiH_4, or silicon hydride. The sugars, which are formed of carbon, hydrogen and oxygen and called carbo-hydrates, can be turned into analogous compounds of silicon, hydrogen and oxygen, called silico-hydrates. And so on.

But because of the high melting point of all silicon compounds, like sand, the man whose carbon atoms had all been replaced by those of silicon would be *frozen stiff* at room temperature, whereas if he stepped inside a furnace of a thousand degrees C, his siliceous body would soften enough for him to move about. This is all highly speculative, of course, but within the bounds of reason. And here is a curious thing. Organic matter is amorphous, *i.e.*, non-crystalline, and grows by a process of cell-subdivision. We cannot think of a rock growing, but it is a fact that mineral matter, when coming out of solution, piles up crystals in a manner closely resembling the phenomenon of growth. Ed.

THEORY OF BRAIN ACTION

Editor, Science Questions and Answers:

I've heard so much about the "electro-chemical" theory of how the brain works that I wonder if this Department can give a concise statement as to what this means?

PHIL GARRARD,
Randolph, Nebraska,
Box 62.

The electro-chemical theory of brain action attempts to explain the sum total of human thought by means of known laws of science. It does not admit of a "soul." Note that it is a theory, not a statement of fact.

Stated simply, this theory says that the cells, the grey matter of the brain, have in them radiogens which explode under stimulus and shoot tiny electrical currents through the matrix—the brain's white matter, which bathes all the brain cells. The energy of the radiogens comes from food, which reduces at the last to plant food, which is produced by the sun's energy acting on plant life. Thus a radiogen is simply a chemical unit of sun energy. When your eye sees, and your ear hears, and your finger touches, and your tongue and nose taste and smell—these five sensual stimuli to the brain, through the system of nerves, cause the radiogens to burst and fling electrical energy through the brain. This electrical energy is supposed to be our manner of thinking. We think, by this theory, in volts and amperes, although no meter is delicate enough to measure the microscopically small amounts of current produced. The theory is only half-heartedly supported in the scientific world for the reason that no artificial apparatus can be made, duplicating these relatively simple operations, that will "think" as if it were alive. Ed.

SPACE SHIP CONSTRUCTION

Editor, Science Questions and Answers:

Of course I know that a real space ship has never been built, and that those used in interplanetary stories are imaginary, but when one is built some time, what metal will they use for making the hull? Some authors use coined words to describe what their ships are built from, but have engineers and scientists worked on that prob-

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lem at all? Is it true that modern industry has discovered all the possible alloys, so that it would have to be one we know already?

CARL SCHAAF,
Pell Lake, Wisconsin.

It is hardly true that all alloys have been already discovered. It is estimated that there are 10,000 different alloys in use today, but it is probable that there are a million more that will be discovered.

The question of what alloy to use for a space ship's hull can be answered only generally by this department. When the time comes for it, the requisites will be: lightness to save fuel (if it is a rocket), sturdiness to withstand perhaps violent landings, extreme toughness to ward off the smaller meteors in space (the larger ones would crash through it if the hull was of diamond), and a low conduction of heat from inside to outside, to eliminate a need for excess heating apparatus.

There are three possible metals for imparting lightness to the hull—aluminum, magnesium, and, best of all, beryllium, but the latter is extremely rare. Addition of a suitable amount of iron or some iron alloy would give the quality of sturdiness. In the point of toughness, perhaps the action of manganese or chromium could do the trick. Low heat-conductivity can be attacked from a different angle, that of having two sleeved hulls with an air or vacuum space in between.

In summation, it is generally conceded that the building of a suitable hull for a space ship would not be as bothersome a task as that of finding metals refractory enough to serve as rocket tubes. But that leads to a technical discussion on which the last words have not yet been spoken. Ed.

THE AGE OF THE EARTH

Editor, Science Questions and Answers:

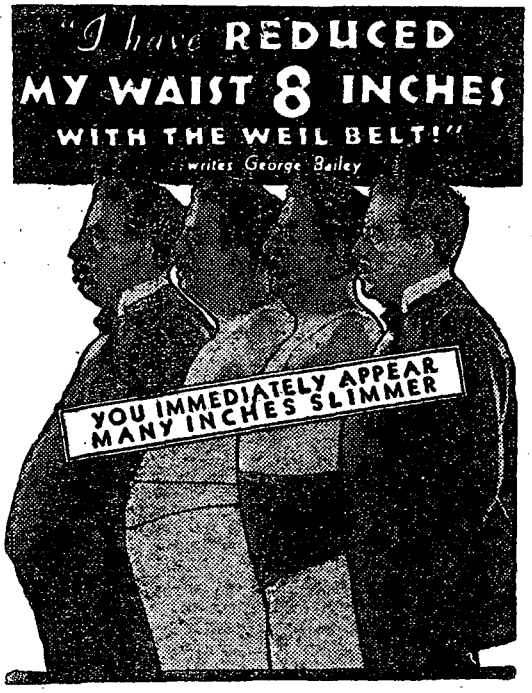
Is your Department open to anybody? If so, I would like to ask a question. I have seen it stated that radio-activity determines the age of the earth between one billion and three billion years. How can the scientists estimate this by the method of radio-activity? I really can't see any relationship at all between the earth's age and radio-activity. I would appreciate it if you could give a short explanation of how the thing is worked out.

LEONARD WEST,
5552 School St.,
Chicago, Ill.

First of all, the so-called "uranium-clock" does not determine the age of the earth itself, but only of the earth's *crust*. Radio-activity furnishes no clue as to the immense period of time that elapsed between earth's expulsion from the sun as a ball of molten matter and the cooling that finally formed the crust. This will be apparent when the following account is read.

The element lead is the keynote to this way of determining the age of the earth's crust. There are three kinds of lead recognized, all chemically alike, but having slightly different atomic weights. Lead produced from the breakdown of uranium, by the natural process of radio-activity has atomic

(Concluded on Page 118)



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(Concluded from Page 117)

weight 206. Lead which results from the radio-active breakdown of thorium has A.W. 208. Ordinary lead, or that which was formed directly when all matter was formed, has A.W. 207. The physicist has instruments delicate enough to distinguish these three forms of lead without doubt as to which is which.

Now, the study of radio-activity proves that one percent of uranium disintegrates in 66 million years. From this it may be deduced, by carefully figuring the proportion between lead-206 and uranium, that the age of minerals in the lowest Pre-Cambrian rocks (the oldest known to geology) is about 1,200,000,000 years. This gives the minimum possible age of the crust.

By a slightly different line of reasoning, we may get the maximum age. Instead of dealing with the oldest known rocks in this case, we treat of the whole crust in general. The relative proportion of uranium and lead-206 in the whole crust must give the maximum length of time it took to form that proportion of lead to its parent substance. This involves a technicality of estimating first how much of all the lead in the earth's crust is lead-206 and 207 or 208. A general estimate gives 30% of lead-206. To produce this proportion from uranium should take about five billion years.

Thus, the careful scientist will say that the age of the crust runs between one billion and five billion years. The average of these two figures, three billion, can be taken as not being more than twice too great or three times too small than what the figure must actually be.

The estimate based on the relative proportions of thorium and lead-208 is of wider range because thorium is much rarer than uranium and the figures are consequently much more general. Ed.

ASTRONOMICAL TERMS

Editor, Science Questions and Answers:

Could your Science Questions and Answers Department give a short explanation of such astronomical terms as "conjunction" and "opposition," "apogee" and "perigee," "aphelion" and "perihelion"? I've seen these terms in your stories, and somehow have never been able to get them straight. I have a vague idea that they are in relation to the paths of the orbits, but would be much obliged to have them explained thoroughly.

FRED SAMUELSON,
908 W. Chapin St.,
Birmingham, Mich.

The astronomical terms you mention are quite confusing, it is true, at first glance. *Perihelion* is the scientific name of the point of the earth's orbit *nearest* the sun. *Aphelion*, conversely, is the point *farthest* from the sun. At approach to *aphelion*, for instance, the earth is moving steadily outward from the sun at the same time that it is performing its orbital motion. All orbits, of course, are ellipses and not circles. These terms are more extensively applied to any celestial body that revolves around a primary—comet, satellite, asteroid, even a binary star—with the sole exception of the moon. In the latter case, the terms *perigee* and *apogee* are used, respectively the nearest and farthest points of the moon's orbit to earth. However, it is permissible to extend these latter two terms to the moons of any planet.

Opposition and *conjunction* cause much trouble at first in their interpretation to the layman. *Opposition* is that point at which a planet (as seen from earth) is exactly 180 degrees from the sun. In other words, in the midnight sky. Thus when the earth is between Mars and the sun, Mars is in *opposition*. Note—this does not mean in *opposition* to *earth*, but to the *sun*. Therein lies all the confusion over this matter. The viewpoint, one must remember, *is from the earth*. *Conjunction*, which to the layman would be when earth and Mars lie on the same side of the sun, is actually when the earth and Mars are farthest apart. Because, of course, *conjunction* means *conjunction of the sun and Mars in the sky*, which occurs only when Mars is on the other side from us.

The inferior planets, Venus and Mercury, can never be in *opposition* in the sky. A moment of thought shows the reason why, for whether earth is on the same sun side as Venus or not, Venus is always in the same portion of the sky as the sun—there can be *no* Venus shining in the midnight spot (the nadir). But here, in the cases of Venus and Mercury, we have *superior* and *inferior* conjunction, respectively the farthest and nearest *conjunctions*.

To the planet Pluto there is no such thing as *opposition (i. e.*, another planet shining in its midnight sky). To it all planets are in either inferior or superior conjunction. There of course would be *opposition* if there were another Trans-Pluto planet. Ed.

Send Your Queries to

EDITOR, SCIENCE QUESTIONS AND ANSWERS

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SCIENTIBOOK REVIEW

ROCKETS THROUGH SPACE—P. E. Cleator, Simon & Schuster, Pub., N. Y., N. Y. $2.50.

Rockets Through Space is a serious, authoritative work which discusses interestingly the many problems which have to be considered before space traveling can become a reality.

As things are, the author points out, a trip to the Moon is actually possible today! But with the present fuel employed in launching rockets it is impractical. For every 20 tons of freight the rocket would require 4,380 tons of fuel, liquid oxygen and gasoline. And it would cost in the neighborhood of $100,000,000 to launch into space.

The book is written by the President of the British Interplanetary Society, and is exhaustive in its scope. Profuse illustrations consist of technical diagrams and photographic plates of rockets in various activities. Astronavigation is critically presented with up-to-date scientific references for a background.

For the scientifically minded, *Rockets Through Space* is a simple, factual account of what has already been done with the rocket and what difficulties must still be overcome. For the imaginative, it is a breathtaking excursion into interstellar space with the Sun as a lighthouse and a neighboring planet as a dock.—M. W.

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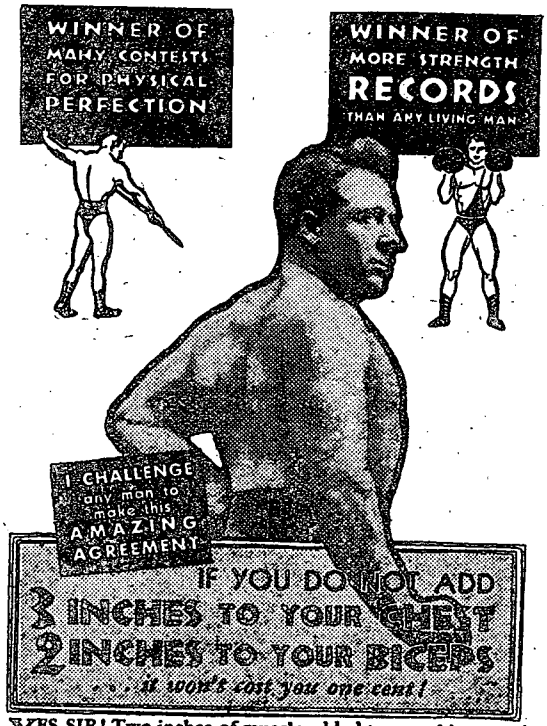
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Like the first space-travelers, we will have obstacles to meet. Your letters will be anti-meteor screens, guarding us against dangers in our path. It's a long journey we have in mind, but one worth the hazards.

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FOREIGN CHAPTERS

Leeds Science Fiction League (Chapter No. 17).

(Continued on Page 126)

APPLICATION FOR MEMBERSHIP
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10—36

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GUIDE TO SCIENCE KNOWLEDGE ANSWERS

(See Page 114)

1. Page 103 in DICTATOR OF THE ATOMS
2. Page 63 in LIQUID LIFE
3. Page 69 in LIQUID LIFE
4. Page 112 in CRYSTALS OF MADNESS
5. Page 84 in THE MICROSCOPIC GIANTS
6. Page 55 in RHYTHM OF THE SPHERES
7. Page 47 in MAN-JEWELS FOR XOTHAR
8. Page 48 in MAN-JEWELS FOR XOTHAR
9. Page 35 in COSMIC QUEST

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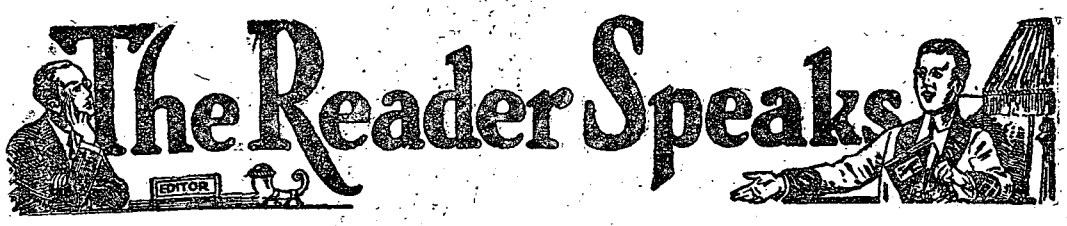

IN this department we shall publish your opinions every month. After all, this is YOUR magazine, and it is edited for YOU. If a story in THRILLING WONDER STORIES fails to click with you, it is up to you to let us know about it. We welcome your letters whether they are complimentary or critical—or contain good old-fashioned brickbats! Write regularly! As many of your letters as possible will be printed below. We cannot undertake to enter into private correspondence.

FROM THE CHICAGO S. F. L.

Under the new editorship of THRILLING WONDER STORIES I foresee a renaissance in science fiction such as the fans have never dreamed of. Under the new guidance the rejuvenated magazine will hit new highs in the way of good science fiction reading matter. Of this I am convinced.

The line-up in the first issue is a wonder in itself. Never has there been such a galaxy of aces in any issue of any science fiction magazine since they began to appear on the stands. Cummings, Farley, Kline, Ernst, Hamilton, Merritt, Binder, Weinbaum and many others are due to parade before us consistently. Certainly the most dejected and pessimistic fan will come to life with a bang when he glimpses even one issue of our new mag!

As Director of the Chicago Chapter of the Science Fiction League I wish to express to the editor of THRILLING WONDER STORIES my sincerest wishes for that greater success which accrues to giving the fans what they want in large quantities of excellent quality.—Walter L. Dennis, 4500 N. St. Louis, Chicago, Ill.

THEY LIKE US!

Just a brief note to let you know that your new issue is excellent. It contains all of my favorite authors. Am glad you still have the old departments and features. The new cartoon series looks good.—Mario Racic, Jr., 37-03 23rd Ave., Astoria, L. I., N. Y.

The first number of the new THRILLING WONDER STORIES hits the mark. I have been a reader of science fiction for six years now, and this beats them all. But—there's always a *but*—I'd like the mag better if you ran more interplanetary stories. I like the Cummings story in the first issue.—Austin Roquemore, 119 E. Hazel Ave., Ponca City, Okla.

(A couple of interplanetary yarns in this issue. More next month.—Ed.)

Best wishes for outstanding success to the new THRILLING WONDER STORIES. Your August issue is first-rate. My favorite story is "The Circle of Zero." It is a fitting climax to the remarkable career of Mr. Weinbaum. Second choice is Kline's "Revenge of the Robot."—Lester E. Balcom, 294 Summer St., Malden, Mass.

I had purchased and read your new magazine before your announcement came in the mail. I like your work. And if you can continue to put out a magazine as good you will have me as a steady customer.—William F. Poynter, Olympic Club, San Francisco, Cal.

I've just finished your August issue and found it good, particularly the Weinbaum and Cummings stories. I notice you either include in the first issue, or announce for the next, practically all those authors that we fans keep yelping for all the time. The only two I can think of who would make the new magazine perfect are Dr. Keller and Arthur K. Barnes. Yarns by these two favorites will get my shekels all the time. —Henry Roshier, 1618 Whitley Terrace, Hollywood, Calif.

(Dr. Keller has been ill and is not writing now. Arthur K. Barnes writes detective fiction for our companion magazines.—Ed.)

Congratulations on a thoroughly engrossing and entertaining issue. Your table of contents reads like "Who's Who in Science Fiction." O. A. Kline's and S. G. Weinbaum's stories far excel anything else in the issue. A. Merritt's little gem was entirely too short.

And now, the science fiction fan's pet pastime, requests. Enlarge the S. F. L. department and get Edmond Hamilton. Emulate your first issue and the brickbats will be few and far between.—Walter E. Marconette, 2120 Pershing Blvd., Dayton, Ohio.

(Ed Hamilton has a story in this issue—and there are more Hamilton stories and novelettes to come. And there's another Merritt story for you in this issue.—Ed.)

THRILLING WONDER STORIES, with its first issue, "put it over" by obtaining Weinbaum, Merritt, Binder and

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Cummings. The strip story and the announcement of a FREE swap column are further improvements.

In answer to J. Mallory: A ray, e. g. X-ray, is usually the result of a stream of visible electrons (blue, red, etc., as you question) which strike the anode of the tube or projector and set up the particular ray.—Rudolph Castown, 42 Amity Pl., Mar. Harbor, St. Is., N. Y.

I have purchased and completed reading your August issue of T. W. S. and have enjoyed it as usual. Please do not stop publishing this very entertaining magazine. May I add a little criticism? I don't like to think that the "future man" will look as depicted on the cover. Incidentally, I did enjoy the story the cover illustrated. The stories that clicked best with me were "The Hormone Menace," "Blood of the Moon," and the "Nth Degree."—Mrs. James Dimakis, 33 Alexandria Ave., Ticonderoga, N. Y.

This is my first fan letter to any magazine. You have certainly done a masterly piece of work in taking over WONDER. Please make WONDER a monthly magazine. All the stories in the initial issue are fine. Keep up your good standards.—Mark Reifschneider, 16007 Holmes Ave., Cleveland, Ohio.

HE COVERS THE COVER

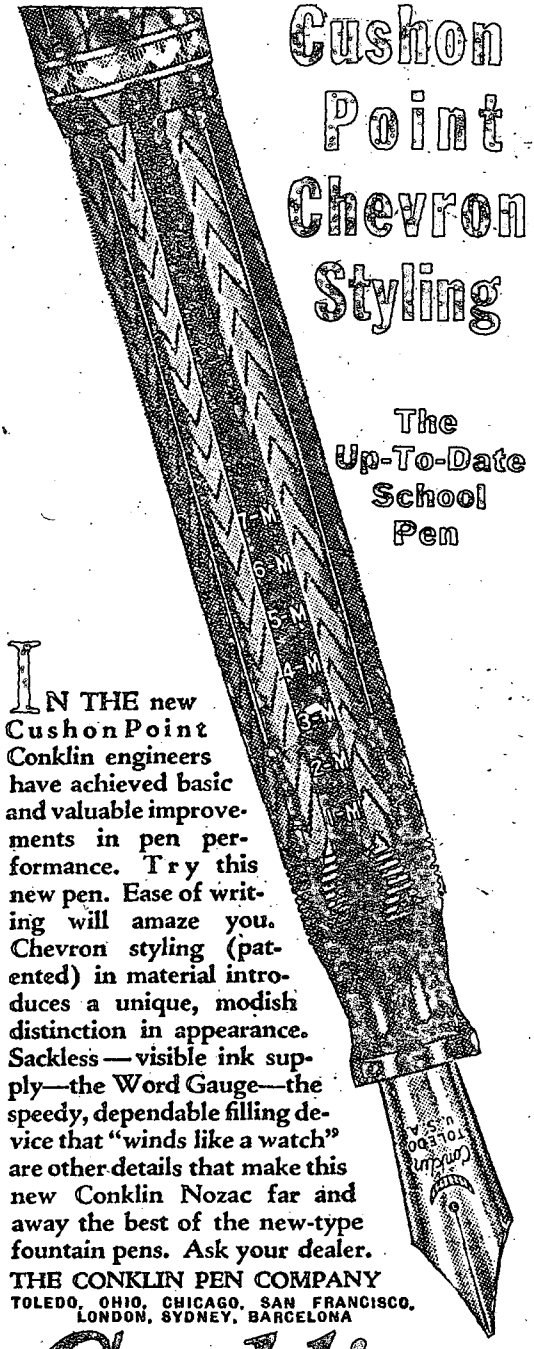
I was glad to see your August issue. The illustrations by Marchioni are really good. Regarding the first issue of THRILLING WONDER STORIES, I liked the whole magazine; stories, pictures, set-up as a whole. One exception, though; the cover depicts human beings from a prehistoric caveman to a man of the far future. Now, my kick is this: how could the man of the future have evolved, or devolved, into that bird-like figure drawn by Marchioni? From the caveman to the twentieth century there is practically no change in the form of the body though there are ages between them. It is therefore illogical to suppose that men would by subsequent evolution gain bulbous eyes, a scale-covered body, the tail of a bird, webbed feet, and an enormous head larger than the body. Incidentally, such tiny feet could never support and balance such a top-heavy body.

To George Chobanian: Luminol is 3-aminophthalylhydrazide, and not 3-aminophthalylhydroxide. To J. Mallory: Sure, the death rays are colorless. But colored beams of light must be used simultaneously as tracers to show where the death rays are focussed. Success to the new T. W. S. and long may it flourish.—Charles Johnson, 3301 Highland Ave., Drexel Hill, Penna.

If the August issue of THRILLING WONDER STORIES is a prophecy of what is to come, I am greatly pleased that the ownership has changed.

I am especially glad to see Ray Cumings back, or rather to see him in T. W. S.

(Continued on page 124)



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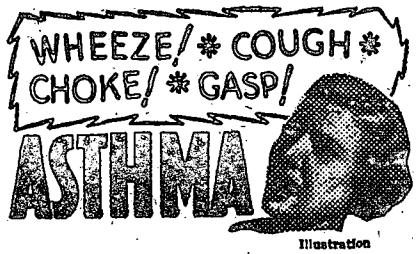

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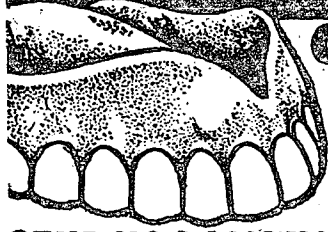

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(Continued on Page 123)

Arthur J. Burks is another writer I am happy to see is contributing to our magazine.—Phil McKernan, 827 Greenwood Ave., San Mateo, Calif.

BRICKBATS—ALREADY!

I hope that you will take these criticisms of mine in the constructive spirit in which they are offered. The illustrations are satisfactory; Marchioni is a good artist. The idea of a free swap column is a fine one. I always thought it should be a free service anyway.

The general appearance of the magazine is O. K. As for the contents—not so good. In the first place, most of the stories fairly shout "hackneyed blood-and-thunder," especially that juvenilistic cartoon, Zarnak. I wouldn't be too proud about those Cummings and Zagat stories. Both contain not a single new idea, Cummings even revising the moth-eaten villainous-Martians idea. Binder's yarn was just another future adventure story. Ernst's story was mere wild adventure, but it was written in a nice style. I really enjoyed Weinbaum's "Circle of Zero." It was more of a fantasy yarn than stf., but it had that vital spark which every good author injects into his stories. Two of the shorts upheld the wild and woolly theme, both stories containing bad, bad villains. The plot of "The Drone Man" should have been lengthened. Glad to see Merritt back.

In closing, don't get the idea that I'm a devotee of solid science and a fanatic against adventure. But this hair-raising stuff will not go over with the more mature readers of stf. A happy medium of science and adventure could be balanced with adventure shorts.—James Tibbetts, 64 Brown Street, Liberty, Missouri.

(Ouch!—Ed.)

PAN MAIL

Though with me it is "One for Paul, and Paul for one!" and imaginative illustrating is as inconceivable to me without the "Inimitable" on tap as interplanetales becoming extinct as a type, I was surprised with Marchioni's improvement, and found his illustrating of the initial T. W. S. quite satisfactory.

As to stories, however, I am sorry to say, as a "gourmand of the old guard," fifty per cent of the fiction was flat, to my taste. Not even average; just fair. The under-par presentations were: Ray Cummings' "Blood of the Moon"; "The Hormone Menace" by the brothers Binder; "Land Where Time Stood Still," Zagat; and even A. Merritt's "Drone Man." In the Zagat tale it impressed me as illogical that the future men should have such enormous ears—when telepathic communication had

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replaced the spoken word! Sorry to see scientists (especially of an advanced era!) portrayed as such crooked characters by Kline in his averagely interesting "Revenge of the Robot." No particular complaint about the alliteratively titled "Death Dives Deep"; I enjoyed the Ernst tale rather well. "Nth Degree" met with my approval; in fact, I found Mort Weisinger's O. Henry yarn second best of the whole bunch. Top tale of the issue, in my opinion, was the swell S. G. Weinbaum's original, entertaining, and really thought-provoking "Circle of Zero."—Sciencerely, F. J. Ackerman, 236½ N. New Hampshire, Hollywood, Calif.

THE COVER LIKED

As a more or less "old guard" reader of the various Wonders, I was greatly surprised and satisfied over THRILLING WONDER STORIES. The biggest compliment I can hand you concerns the cover. We howled for years for the former owners to alter that cover, but they would not. So as long as you don't ring in a red or a yellow sky on us "for newsstand sales," there will be peace in many camps.

I would like to bring up another old howl: that cut that heads the Readers' Dept. I am sure that a newer, more modern one would be appreciated. Even a science fiction fan's imagination couldn't be stretched into accepting that picture at its face value.—Bob Tucker, 501 E. Douglas St., Bloomington, Ill.

(Thanks for the nosegays. We'd like the opinions of other readers on Mr. Tucker's criticisms of the cut for this department. It symbolizes six years of Wonder.—Ed.)

THE WEINBAUM MEMORIAL VOLUME

This is to announce that the memorial volume of the works of Stanley G. Weinbaum has gone to press, and will be ready for distribution on or about October 1st. By popular demand of the many admirers of this incomparable writer, we are leading off the book with the long length unpublished novelette, "Dawn of Flame," in addition to "The Martian Odyssey," his best-liked work, "Mad Moon," "The Adaptive Ultimate," "The Lotus Eaters," and "Worlds of If."

The price of the book is $2.50, and for the information of those who haven't yet ordered, you'd better hurry, as the edition will be extremely limited, and judging from the enthusiastic responses from the first call, it will be exhausted even before publication. However, more orders would force us to double the edition, so write immediately and enclose check, payable to Raymond A. Palmer. Mail to 2616 W. Michigan, Milwaukee, Wisconsin. — Raymond A. Palmer.

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(No science fiction fan's collection would ever be complete without this Weinbaum volume. We hope our readers will order their volume from Mr. Palmer so that the size of the edition may be conveniently estimated.—Ed.)

SUGGESTIONS

Here come a few of those ideas and suggestions you asked for:

I think the new THRILLING WONDER STORIES is a big improvement over the old. The stories seem to be more interesting and entertaining—less dry and stereotyped. What a line-up of authors, too! Cummings, Binder, Zagat, Weinbaum, Merritt, Ernst and Kline! Marchioni did a great job on the illustrations, and the cover was attractive.

As for suggestions: It is rather difficult, I think, for a bi-monthly magazine to sustain reader's interest. I would suggest that you publish monthly. I like the idea of the large number of short stories and

(Concluded on Page 126)

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(Concluded from Page 125)

novelettes. But I think it would be a good idea to publish a three or four part serial once in awhile. You might cut out two or three of the novelettes and put in a novel instead. I think a long story interests a reader more than a number of shorts, because he has time to get his teeth into it.

I think you will have a big success with the magazine if you continue to give us such good stories by such prominent writers as appeared in the August issue. Your new policy with regard to stories promises much also. I've always liked Cummings and Burks and the others who used to be so prominent, but who have been recently absent from the science fiction field.—L. P. Wakefield, 2832 Marshall Way, Sacramento, Calif.

WE'RE TOPS WITH HIM

I have just finished reading the August number of T. W. S. and I believe it to be the best science fiction magazine I've read in the last five years. It brought back many memories of "the good old days" of 1929-30 when science fiction was at its peak. All those star writers in one issue is too good to be true!

The magazine as a whole is excellent. However, I'd like to make a few suggestions. I am one of that group of fans who read science fiction for amusement and not for the science in the stories. Therefore I don't believe human interest element should be subdued. The authors should be allowed more free rein and should not be expected to coincide exactly with scientific facts. These have been the two glaring faults in late years.

Another suggestion is to give us more interplanetary stories. These have always been the S-F reader's favorite type, and have been sadly absent lately. I will close with a wish to see THRILLING WONDER STORIES appear monthly and asking to hear from other readers interested in interplanetary travel.—Jack Wilson, C C C Co. 1857, Camp SP-41 T, Sweetwater, Texas.

THE SCIENCE FICTION LEAGUE

(Continued from Page 121)

Director, Douglas W. F. Mayer, 20 Hollin Park Rd., Roundhay, Leeds 8, Yorkshire, England.

Belfast Science Fiction League (Chapter No. 20). Director, Hugh C. Carswell, 6 Selina St., Belfast, Northern Ireland.

Nuneaton Science Fiction League (Chapter No. 22). Director, M. K. Hanson, c/o Mrs. Brice, Main Road, Narborough, Leicestershire, England.

Sydney Science Fiction League (Chapter No. 27). Director, W. J. J. Osland, 26 Union Street, Paddington, Sydney, N. S. W., Australia.

Glasgow Science Fiction League (Chapter No. 34). Director, Donald G. MacRae, 36 Moray Pl., Glasgow, Scotland.

Barnsley Science Fiction League (Chapter No. 37). Director, Jack Beaumont, 30 Pontefiact Road, Barnsley, Yorkshire, England.

OTHER CHAPTERS

There are other domestic Chapters of the LEAGUE, fully organized with regular meetings, in the following cities. Addresses will be furnished upon request by Headquarters to members who would like to join some local branch. Chapters are listed chronologically according to Charter:

Brooklyn, N. Y.; Lewiston, Ida.; Erie, Pa.; Los Angeles, Calif.; Monticello, N. Y.; Mayfield, Pa.; Lebanon, Pa.; Jersey City, N. J.; Lincoln, Nebraska; New York, N. Y.; Philadelphia, Pa.; Oakland, Calif.; Elizabeth, N. J.; Chicago, Ill.; Tacoma, Wash.; Austin, Tex.; Millhiem, Pa.; Bloomington, Ill.; Newark, N. J.; Stamford, Conn.; Denver, Colo.; Lakeport, Calif.; Ridgewood, N. Y.; Woodmere, N. Y.; Beckley, W. Va.; Tuckahoe, N. Y.; South Amboy, N. J.; Pierre, S. Dak.; Albany, N. Y.; and Boonton, N. J.

NEW MEMBERS
UNITED STATES

Lowell Rose, R. F. D. 1, Box 22, Clarksburg, California; Niles Martin, Shabbona, Illinois; Ted Kulinski, 1411 Elston Ave., Chicago, Ill.; Robert Brubeck, 1311 Green Road, South Euclid, Ohio; Emil J. Novak, 2215 South 13th Street, Omaha, Nebraska; Irving Titel, 215 Roebling St., Brooklyn, N. Y.; Lawrence Boyk, 1330 Diversey Parkway, Chicago, Ill.; C. E. Forst, 617 North Maple Drive, Beverly Hills, California; Ray Wilson, 2305 Tatnall St., Wilmington, Del.; Hall Rowe, Littlefield, Texas; Gerald Stithem, 218 So. East G St., Auburn, Wash.; Jack Wright, P. O. Box 425, Mission, Texas; Milton Badeaux, 1101 R. R. Ave., Morgan City, La.; Stanley Magusiak, Box 33, Newmarket, New Hampshire; Ray Hammond, 417 Second Ave. S. W., Rochester, Minn.; Andrew M. Koonitz, 97 Center Alley, Johnstown, Penn.; Albert Gibbs, 2226 Loring Pl., Bronx, N. Y. C.; Metro Urich, 1032½ Court, Allentown, Penna; Norbert T. Hild, 7000 Hague Ave., Cleveland, Ohio; Frank Sorrels, Box 44, Egan, Ga.

CANADA

Robert Cressman, 236 Weber St., East, Kitchener, Ontario, Canada; Arnold Lander, 410 Redwood Avenue, Winnipeg, Manitoba.

CORRESPONDENCE

—where members of the Science Fiction League ask for correspondents.

Norbert T. Hild, 7000 Hague Avenue, Cleveland, Ohio, would like to correspond with girl readers who are interested in science and chemistry.

W. Miller, Jr., 69 Halstead, East Orange, N. J., will correspond with anyone interested in microbiology, Mayan civilization, or Atlantis.

CHAPTER NEWS AND GENERAL ACTIVITIES
LOS ANGELES

The Los Angeles SFL Chapter No. 4 meets twice monthly at a class cafeteria centrally located in downtown Los Angeles. Executive Director Ackerman attends regularly, and at an early date accepted Directorship of the Chapter's Fantascience Film Division. In this capacity, he prepared a petition for the revival of outstanding imaginative movies, and called same to the attention of the manager of the Vogue Theater, Hollywood, after members

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and guest speaker of the occasion had signed. So far, this has resulted in the revival of two fantastic films. "Gold," the overseas scientifilm, played at the Continental Cinema, whereat Mr. Ackerman contacted the manager with a specially prepared list of names and addresses of local fans, so that these enthusiasts might be apprised of the picture's run; also, urged the manager to secure such other European scientifilms as "Alraune," "1940," "Mistress of Atlantis," "Ruler of the World," "Judex," "Mabuse," "Once in a Blue Moon," etc. Scenes from the scientific-serial, "Flash Gordon," have been exhibited by Ackerman, in addition to stills from several Soviet fantasy films; and pictures from his kodak collection passed around of various science fiction celebrities. Bob Olsen, the famous writer of fourth-dimensional stories, made a recent meeting most interesting by an informal interview with one of the members. Three members: James N. Mooney, Roy Test, Jr., and Forrest Ackerman are Esperantists, and tell the other members the latest topics on the "Tongue of Tomorrow." Rus Hodgkins, treasurer, has a complete file of all the major stf. magazines; has shown excellent examples of his binding of science fiction excerpts. As soon as the Chapter can find a suitable place, a scientifictional library is to be established. Member Alvin Mussen has volunteered as Librarian. Members Marshall, Ackerman, and others have offered to supply certain excerpts, magazines, and books to start the collection. Don Green will donate scientifilmaterial; Jim Mooney, artist from New York, has located in LA, joined Chapter 4, and is composing a series of scientific creations which may be put on display in the library for interests of members . . . A Director of Research was originally proposed to keep track of stf. appearing in out-of-the-way sources of today, and to uncover old stories out of print. However, the Club decided to wait and purchase, upon publication, a copy of the "Bibliography of Science Fiction," which J. O. Bailey, instructor at a North Carolina college, has been compiling for years. "Having amassed an amazing amount of material," it is reported, "the completed manuscript will be in the hands of publishers during the summer." On June 11th the Chapter held one of its most successful meetings. Director Hofford read a reply from "Skylark" Smith, Honorary Member of the LA League, re his (Hofford's) plan to form a unique IPC in the Club, an activity inspired by the stories of the spacemen. Mr. Ackerman reported on the scientifilm, "Trapped By Television." Mr. Marshall passed around a strip of three-dimensional cinema celluloid he has developed. And discussion of the new THRILLING WONDER STORIES was carried on.

The Los Angeles Chapter, under the vigorous and able direction of Mr. Ackerman and his colleagues, continues to be the most active and progressive in the League. Other League members would do well to program their meetings and ambitions similarly.

CHICAGO

Mr. Walter Dennis, head of the League's other leading chapter, writes:

"The chief pride of the Chicago Chapter of the Science Fiction League just at the present time is its leaflet which is of, by, and for the SFL as a whole. This little journal is published with no commercialism in mind except that which is voluntary. As the leading chapter of the League we naturally feel obligated to set the pace.

"Therefore, our May issue of the Fourteen Leaflet will be an all-star issue containing material by every one of the active members whom we can possibly squeeze said material from. There will be a number of excellent pieces of a wide variety in addition to the established features. As a mark of appreciation for the fine co-operation received from the members, Director W. L. Dennis is donating a kodak camera to the member who has had, in the judges' opinion, the finest piece of work in the bulletin to date. The judges are Jack Darrow and Harry Boosel, science fiction fans without peer. The June meeting will close officially the present fiscal year at which time the prize will be awarded."

We have had the pleasure of a most interesting visit from Mr. Dennis. He has great plans for the future of the Chicago Chapter and is doing something about realizing them.

Members of the Science Fiction League and Chapter directors are urged to write in to Headquarters with anything they feel may be of interest to the League. Notices should be sent in promptly for early publication.

More S. F. L. News Next Issue

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29x5.00-19	2.85	1.05
30x5.00-20	2.85	1.05
5.25-17	2.90	1.15
28x5.25-18	2.90	1.15
29x5.25-19	2.95	1.15
30x5.25-20	2.95	1.15
31x5.25-21	3.25	1.15
5.50-17	3.35	1.15
28x5.50-18	3.35	1.15
29x5.50-19	3.35	1.15
6.00-17	3.40	1.15
30x6.00-18	3.40	1.15
31x6.00-19	3.40	1.15
32x6.00-20	3.45	1.25
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6.00-16	3.75	1.45

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34x4½	3.45	1.15	
30x5	3.65	1.35	
32x6	3.75	1.45	
35x5	3.95	1.55	
34x7	$10.95	$3.95	
38x7	10.95	3.95	
36x8	11.45	3.95	
40x8	13.25	4.15	
7.50-20	$6.95	3.75	
8.25-20	8.95	4.95	
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THE STORY BEHIND THE STORY

(Concluded from Page 115)

upon a tiny planet hitherto unknown to his race.

The dark nebula was selected as the locale of the invaders' home planet because to me these vast clouds of opacity have always been the most interesting and puzzling phenomena in the known Universe. The odds against life forms from the dark nebula being oxygen-breathing organisms such as those of Earth are about a million to one. Hence, the giant synthetic bubble of black vapor, and the idea of the fatal effect of our atmosphere upon the unprotected bodies of the raiders.

I made no attempt to describe the apparatus and processes employed by the Xotharians in any detail for the simple reason that the primitive minds of Earthmen would be no more capable of comprehending a science so advanced than the inhabitants of a South Sea oyster bed would be of understanding the mechanics of a pearl diver's suit and equipment.

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ARTHUR J. BURKS has been writing science fiction for years, and most every follower will remember his stories, "Manape, the Mighty" and "Earth, the Marauder." We've brought him back to science fiction with his exciting story of super-physics, DICTATOR OF THE ATOMS. Here's how he explains its origin:

Well, I asked the editor of this magazine how he'd feel if, coming to his office one morning, he saw his building suddenly burst into fragments and another building of amazing beauty instantly take position in its place? He didn't know—as who would—but allowed that if the idea were worked out it might be interesting.

The how, when, and whyfore became then a great matter of interest, with "Dictator of the Atoms" resulting. If scientists deny me my premise, I can only refer to Aristotle, whose theories ruled the world for fifteen centuries, only to have some of them exploded in the end. There is, I believe, one exception. He stated that "man will never find out the Unknowable." Scientists have been digging into this like dogs after badgers for hundreds of years, and find it still true, though new and amazing vistas are constantly being opened.

As J. J. Thompson, the great English scientist, said, when other scientists were beginning to believe that experimenting wasn't worth it, because every new discovery killed an accepted theory of the past, in effect: "Every new discovery is a new mountain peak, from which we can look ahead to yet other mountain peaks, scaling which we see yet others, stretching up and away."

It's barely possible that curious readers, with crucible and vacuum tube, while trying to prove or disprove, perhaps, some idea I didn't even realize I was putting into DICTATOR OF THE ATOMS, will blow the fog away from some new mountain peak of science.

What I mean is that stories like this, and magazines like this, may easily become part of history, as did Becher with his wild guess about "phlogiston" in combustion, and Paracelsus with his chatter about human ills, that led to present-day medicine. The story may either be an insult or a challenge to your intelligence. Either way, if it makes you think I'm satisfied.

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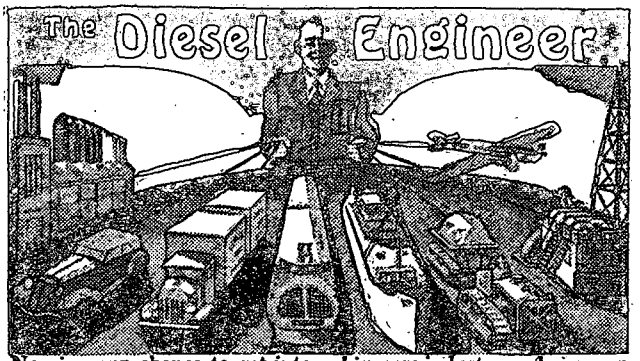

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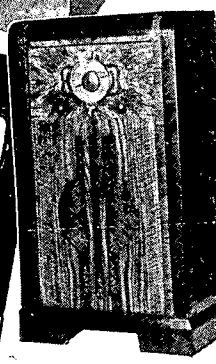

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